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CPC
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ISSUE 57 ● JUNE 1990 ● £1.45

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AMSTRAD ACTION

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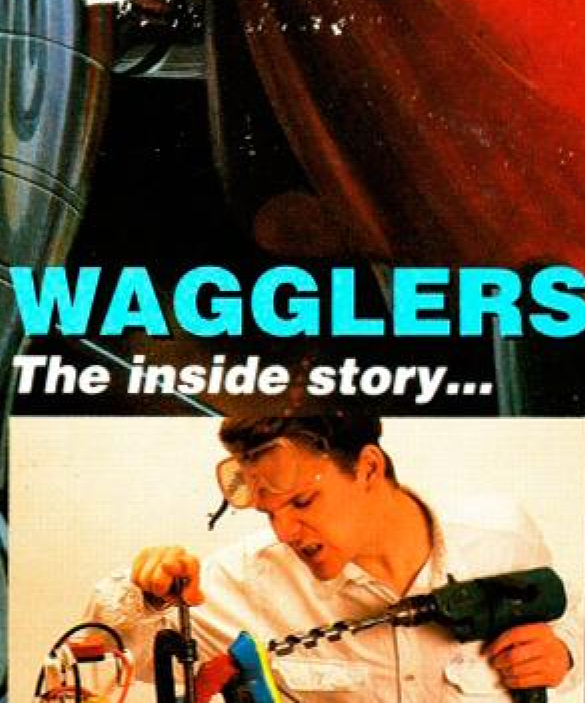
IT'S WAR!

EXCLUSIVE

Turrican **smashes out on the CPC – AA rates the 30 greatest blast-em-ups of all time**

WAGGLERS

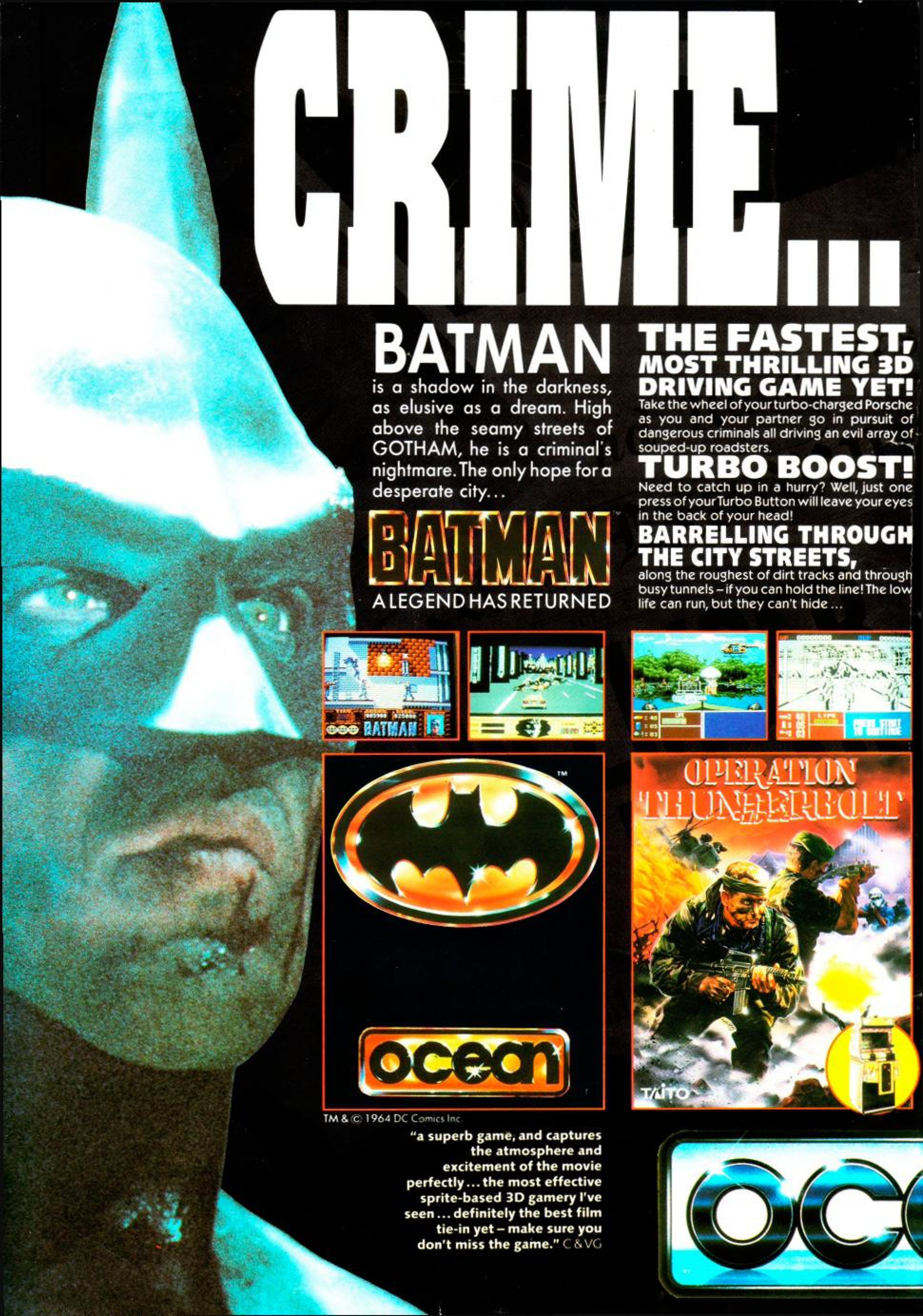
The inside story...



PLUS

- 25 joysticks to be won!
- Writing a megagame Part II – tools of the trade
- Gallery – stunning readers' art
- European Computer Trade Show scoops
- Cheat Mode II is here! – full details inside
- Free for all – PD software to blow your socks off

Turrican ● E-Motion ● Pipe Mania ● World Cup Soccer – Italia '90 ● Ninja Spirit


CRIME...
BATMAN
is a shadow in the darkness, as elusive as a dream. High above the seamy streets of GOTHAM, he is a criminal's nightmare. The only hope for a desperate city...
BATMAN
A LEGEND HAS RETURNED
THE FASTEST, MOST THRILLING 3D DRIVING GAME YET!
Take the wheel of your turbo-charged Porsche as you and your partner go in pursuit of dangerous criminals all driving an evil array of souped-up roadsters.
TURBO BOOST!
Need to catch up in a hurry? Well, just one press of your Turbo Button will leave your eyes in the back of your head!
BARRELLING THROUGH THE CITY STREETS,
along the roughest of dirt tracks and through busy tunnels – if you can hold the line! The low life can run, but they can't hide...
BATMAN
TM
ocean
TM & © 1964 DC Comics Inc.
OPERATION THUNDERBOLT
TAITO
"a superb game, and captures the atmosphere and excitement of the movie perfectly... the most effective sprite-based 3D gamery I've seen... definitely the best film tie-in yet – make sure you don't miss the game." C&VG


FIGHT IT YOURSELF
TWICE THE ACTION THE FUN THE CHALLENGE
ROY ADAM IS BACK!
The Hi-jack report came from a DC10 leaving Paris for Boston – Arab guerillas were in control of flight 102 and had turned the aircraft towards Africa . . . The plane lands in hostile territory and the terrorists begin their demands . . .
USE THE LASERSIGHT
or the bulletproof vest, but watch out for
AIR-TO-GROUND MISSILES
Operation Thunderbolt the incredible Taito coin-op conversion brought NOW to your home computer.
SIX INSPIRED
action sequences put you in control of Elliot Ness's elite squad of crime-busters.
ALLEYWAY SHOOTOUTS, THE BORDER RAID,
The Railway Station confrontation and Warehouse bust culminating in the thrilling denouement of a
ROOFTOP DUEL as you re-live the knife edge existence of Ness in his struggle against the retribution of Capone!
SCORE
TIME
CHASE H.Q.
ARCADE GAME OF THE YEAR
TAITO
THE UNTOUCHABLES
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"a fine example of how to do the job properly . . . a cracking conversion . . . easily one of the most successful licences to date" Sinclair User
NOW FOR YOUR
SPECTRUM
ATARI ST
AMSTRAD
AMIGA
COMMODORE

LINE UP

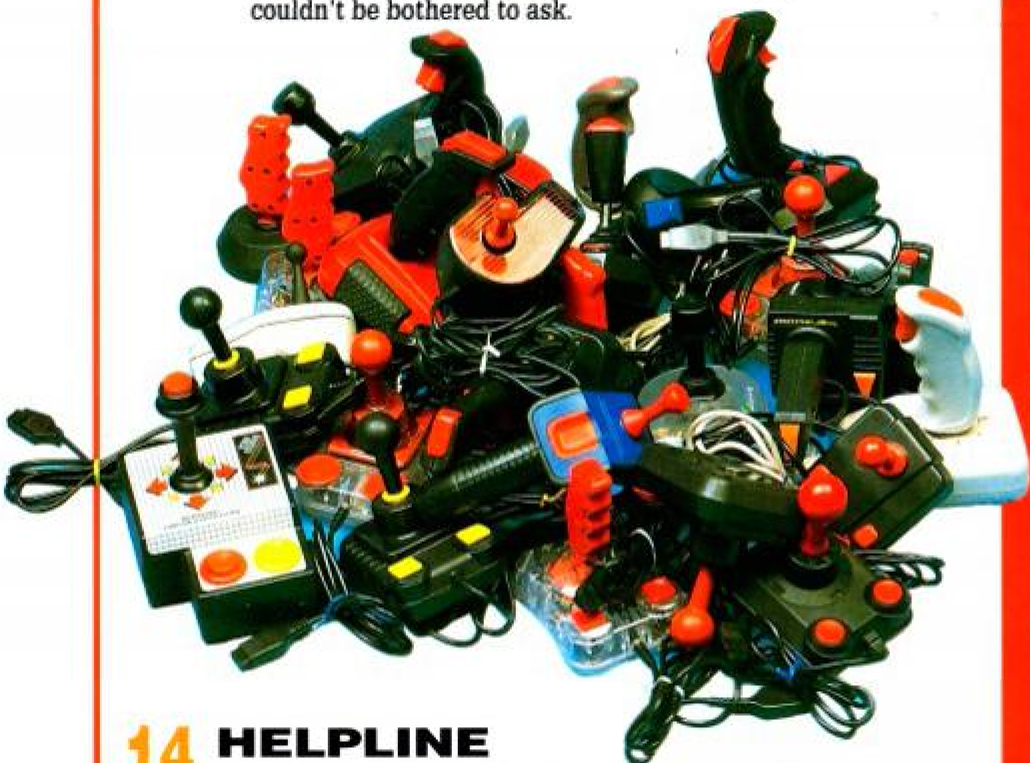
AMSTRAD ACTION ● JUNE 1990

FRONT END

NEWS●LETTERS

SERIOUS SIDE

CPC USES●HARDWARE●PROGRAMMING



Future Publishing Limited
Beauford Court, 30 Monmouth Street, Bath, Avon BA1 2AP

Sorry 'n' all that, but we're so busy putting your favourite CPC magazine together, we just don't have time to take all those calls about cheats, listings, best buys and so on. That doesn't mean we can't help you out, though – 'course not! Just send a letter to *Cheat Mode*, *Type-ins*, *Forum*, *Reaction* etc and we'll do our darndest to sort you out...

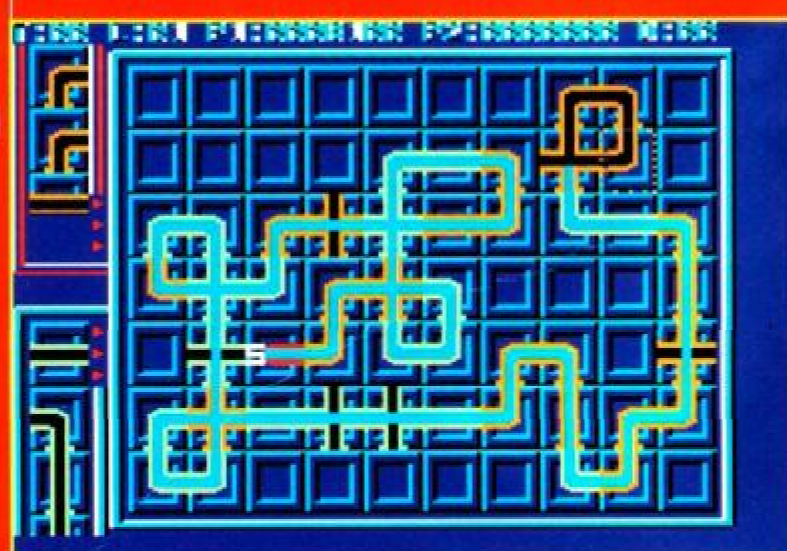
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July – December 1989

THE ACTION BEGINS ON 43!

THE VERY BEST IN CPC ENTERTAINMENT









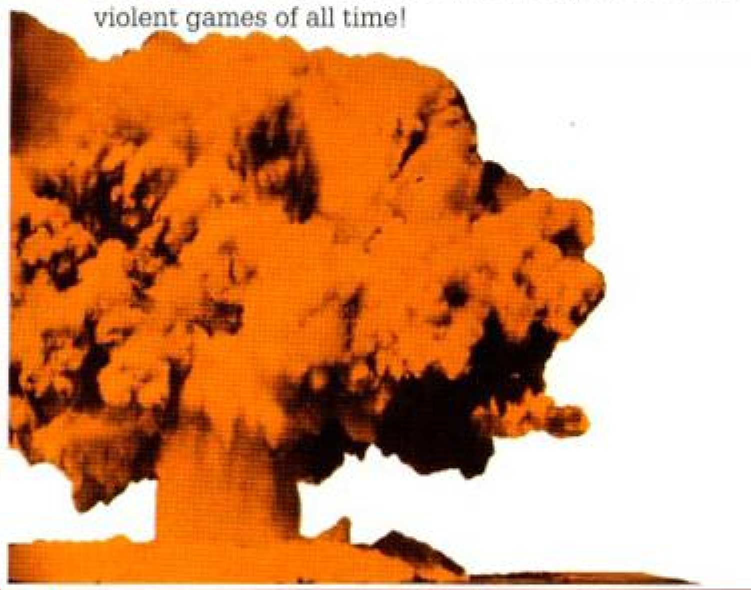


Football mad

Blimey, the World Cup's come round again. It doesn't seem like four years since the last one, does it? I might as well come clean right now and admit that I can't stand football – just a lot of overgrown kids charging round a pitch, kicking a ball and screaming and shouting for ninety minutes...

Still, the game must have some charm, because World Cup fever is definitely upon us. For a start, there's the (admittedly, rather good) *World Cup – Italia '90* from Virgin (reviewed this issue) as well as a few old chestnuts turning up again in the *World Cup Compilation* from Empire, reviewed on page 56. And on their way are *Italy 1990* from US Gold and (deep breath) *Adidas World Championship Football* from Ocean. And as if all that wasn't enough, joystick maker Dynamics is selling a special range of joysticks decked out in the colours of your chosen team... I give up, I really do.







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Available from W.H. Smith, Menzies, Boots, Woolworths and all leading software retailers.

AMSCENE

releases... updates... previews... new releases... updates... previews... new

SUMMER SOFTWARE SPREE

Annual industry "quiet time" fails to materialise – major releases in the offing

As the summer warms up, the leisure software market usually cools off to near absolute zero. But not this year, it seems. Indeed, it looks like software publishers are shifting their marketing emphasis heavily towards the middle of the year.

More summer releases than ever before are planned, indicating a whole new approach games software marketing. Bouyed by the World Cup, perhaps, the US Golds and Oceans of this world are looking to their hottest ever gaming summer. So it's official – the summer lull is history!

The names in the frames

A glance at the major houses' release schedule tells the story. US Gold takes the lead with a catalogue of major titles. *Italy '90*, *Crackdown*, *E-Motion* and *The Dynasty Wars* are all seen as major moneyspinners for the Birmingham-based company. Meanwhile, Ocean has tied up a few neat arcades – *Sly Spy* and *Shadow Warriors* are two – to keep the wolf from the door, while Activision is virtually flooding the market with conversions and original product – *Ninja Spirit*, *Sonic Boom*, *Bomber* etc. Domark is still riding high on the success of *Castle Master* and is set to follow up stunners like *Cyberball* and *Klax*.

Winds of change

Traditional wisdom stated that during the summer months games would die on the shelves as consumers followed outside pursuits and spent their money on holidays and sports. US Gold's tentative venture last July with *Indiana Jones and The Last Crusade* paid massive dividends, however. It sees this quarter as being as important as Easter or autumn.



● *Crackdown* from US Gold is just one of the games defying the 'summer lull' this year.

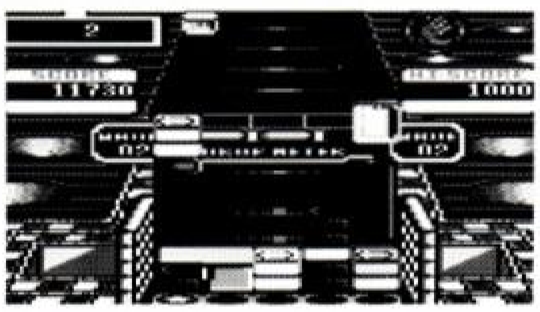
So why this sudden change in attitude? For a start, the European Computer Trade Show gives the whole industry a surge of spring energy as companies vie for glory. Major media events – last year movies, this year the World Cup – give the season form and focus. While the continual proliferation of machines and software houses means that there are more consumers to buy and more products to sell. And with so much competition, no-one can afford to miss the slightest gap.

US Gold's Danielle Woodyat explains the company's new philosophy – "There is no summer lull for US Gold. Previously we tended to concentrate around Christmas, then Easter, then the build-up to the PC show, but now it's all year round. There's a big summer market out there. Kids have got money, they're bored. Summer for us is very busy. We have a major launch coming up this summer, for a start."

Console impact

There is also another altogether more machine-specific reason for the sudden upsurge of interest in CPC games this summer – the new CPC Plus and CPC console. With the launch of the new 'super machine', it's imperative that companies get their Z80 teams together and ready to run. The amount of games being produced and converted could well be a dry run for September, when the new machine and its specification become public knowledge.

So at last it appears this summer is to see off the spectre of the summer slump. Gamesplayers can expect a wider choice of and, due to competition, higher quality of software than ever before. The industry is at last shaking off the cyclic habit of Christmas... Easter... PC Show... Christmas... In the past, this led to insane volumes of product followed by a months in the doldrums. Not any more!



● Domark's *Klax* is set to make its debut this summer.

Konix aims for a million

Konix joysticks may now be sold by Spectravideo, but they're still major sellers in their own right. Indeed, 50,000 eager punters have bought Konix wagglers in just the first three months of 1990 – already half as many as the total number sold last year. Konix sells not just in the UK, but all over the world, and this year the company is aiming high – "Our target for 1990 is a million units", says Konix MD Peter Puresevic.

New products are expected to appear from Konix later in the year. The company has invested over £1 million on research and development over the past twelve months.



● Konix: Flying high.

Gallupping success!

All those readers who've been writing in asking for a software chart are now going to get their wish! *Amstrad Action* has tied up a deal with chart specialists Gallup, and the mag will soon be sporting a regularly-updated list of the country's 20 top-selling games. Brill!

SHOPPER SHOW GAINS A DAY

Just for all those people who like to plan their diaries a long way in advance... this year's *Computer Shopper* show, due to open on Thursday December 6th, will last four days instead of last year's three. This is due to the unprecedented number of visitors last year. Indeed, on that occasion some 3,000 people had to be turned away, the car parks closed and appeals put out on local radio asking people not to come! The organiser, Blenheim Database Exhibitions, is hoping that the extra day will accommodate the numbers expected. Last year, over 25,000 people crowded into London's Alexandra Palace for the event.



LESSONS TO US ALL?

Following *AA*'s education special (*AA*55) quite a lot's been happening on the learning scene.

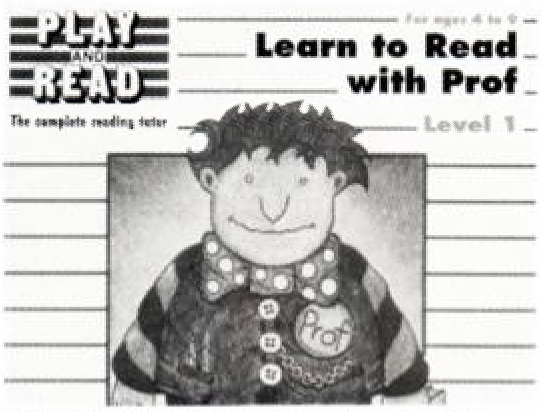
Latest news is from Prisma Software, which is not a household name to CPC owners, but which has been producing educational software exclusively for schools. Now, however, the company is branching out with the release of its *Play and Read* series in home comuter form. "Parents are beginning to realise the potential of such software," explained Jason Salisbury of Prisma, "there is a definite need there. It's grown over the past couple of years."

The *Play and Read* series consists of more than just software, however. There are twelve individual packs in the series, which can be used together or individually. And each pack consists of a cassette, a computer game and five illustrated story books. First, children listen to a story on the cassette, then become familiar with the words used via the computer game. Finally, they can put their new vocabulary to use reading the accompanying books.

The series caters for ages from 4-9, and includes lessons on reading, spelling, writing and reasoning. Each package costs £19.99 and will be available in selected branches of Boots, various department stores and all good computer shops.

Play and Read is coming out on all the major formats. Naturally, we wanted to know what Prisma thought of the CPC. "It's very good", was the reply. What about that educational stalwart the BBC, we asked? "Things are changing."

Prisma Software's address is **Prisma House, PO Box 211, Chester CH1 3NJ**, or you can call 0244 326244.



● *Learn to read with Prof*: A new trend in educational software?

BASIC gets Blitzed

SPM Software is launching a new BASIC compiler for the CPC. The *Blitz* BASIC compiler is reckoned to give speed increased of up to 20 times compared to original BASIC code, and also supports all standard graphic, sound and interrupt commands as well as RSXs. The formidable list of features includes:

- All runtime keywords
- Integer/real/string
- Stand alone code
- RSX support
- Detailed manual
- Copes with programs of any size
- Fast loading code
- Compact code
- Backups allowed

Blitz does require the Bankram, so it'll only run on the 6128. However, the code produced will run on all CPCs. Price will be £19.95, and *AA* will be bringing you a full review just as soon as we get our copy. In the meantime, SPM can be contacted at **32a Albert Street, Seaham, Co Durham SR7 7LJ**.

Three minutes of fun

Fans of those 0898 chatlines who are fed up with Saucy Samantha's Swedish Lessons, and Naughty Noreen's Nightie-line (*I know I am – ed*) can now call up self-styled industry megastar Mel Croucher for three minute's worth of wit, satire, comment and gossip. The "Fun Line" is operating even as you read this, and can be dialled on 0898 299399. Charges are the usual 25p/38p off-peak/peak.



● Mel Croucher's new 3-minute Fun Line starts on May 7th

Trash from Micronet

Micronet subscribers can now play a new game. And *AA* can reveal that it's... *Trash*. No, that's actually the name of the game. Users can find out whether it actually lives up to its title right now simply by typing in the keyword *Trash.

The game lands you in the role of Pan-Dimensional Refuse Officer, and you have to chunter round cleaning up the universe and solving puzzles by means of your 'psionic powers'. Ultimately, you may achieve the coveted rank of Lord or Lady...

Up to 64 people can play *Trash* simultaneously, and on-line charges for Micronet subscribers are 2p per minute off-peak and 8p per minute peak. Prestel users can also climb on the dustcart, but it'll cost them 6p off-peak and 12p peak. Non-subscribers can also play, but they'll have to pay the usual 25p off-peak and 38p peak rates via Callstream on 0898 100 890.

Windows on the CPC

How many people got caught out on April 1st then, eh? You'll notice that us kind types on *Amstrad Action* didn't indulge in the usual annual wind-up – but that didn't stop us savouring the teasers some of the others printed.

For example, *New Computer Express* carried a story about a new Amstrad transputer add-on board using "endochronic parallel diffusers" alongside one about a team of scientists spotting viruses on disks with "neutral-in-use electron scan microscopes".

Best of all, though, was the one on the cover of the WACCI newsletter. "Exclusive – Multi-tasking on the CPC!" screamed the headline, and it accompanied a screen shot of Microsoft Windows up and running on a CPC.

Nice one lads. The only problem is, it's spelt "Microsoft", not "Mircosoft"...



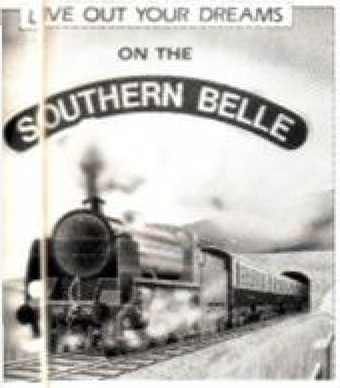
All-format transfer service for CPC

PCW-World is the country's largest independent PCW user group. So what's that to us CPC owners? Well, it's now offering a file transfer service whereby data can be transferred from 3-inch disk to any one of 500 different formats, and vice versa. Since the CPC's disk format is as near as dammit identical to the PCW's, PCW-World can do the same for *AA* readers. Formats handled include PC (360K, 720K & 1.2Mb), Apple Macintosh, ST, BBC and all the other major players, together with such weirdos as the Kaypro, Einstein, RM Nimbus, Sanyo and more.

The service costs £5.95 per disk transferred, but that includes postage, packing and insurance, destination media and VAT – and it's about half the going commercial rate. PCW-World's Gerry Austin says that CPC owners are more than welcome – "We already have many CPC owners using the service."

PCW-World lives at **Cotswold House, Cradley Heath, Warley, West Midlands B64 7NF**, or you can call 0384 66269.

Train Spotting



As if in response to *AA* reader demand, Hewson has announced that it is to re-launch its two famous Train sims *Southern Belle* and *Evening Star* in a single package.

Both games are detailed representations of authentic steam trains, allowing you to explore the finer points of rail history at first hand. Trains at first glance may appear to lack the instant excitement of space battles and death dealing on a large scale, but *Southern Belle* nevertheless scored a massive 81% way back in *AA2*.

The two-game pack will sell for £12.99/17.99 tape/disk. A bargain price for two train trips into locomotive legend, and it's cheaper than a BR awayday super bluesaver return with a railcard to just about anywhere!

More Hewson news involves that man *AA* loves to praise – Raff Cecco. The creator of *Cybernoid* and *Exolon* has been slaving away over a hot keypad to bring us *Stormlord II – Deliverance* – in the next few weeks. Stormy is in hell this time and he has to get his friends the fairies back from the clutches of the Wicked Black queen in an action-packed blast-em-up crammed with strategy gameplay.

If the graphics are risqué as last time, then it'll pay to have a joystick and cold shower ready shortly!

FOOTBALL FOCUS

Guess what? Theres another football game on the way – this time from Grandslam. It does have one big adavantage, though – it's the official England licence.

Mind you, many would see this as a double-edged sword, bearing in mind Endland's rather lacklustre performance in the European Championships a few years back. As Grandslam's Duncan Lowthian states, however, "fans everywhere will be able to re-run the World Cup to their hearts' content" – i.e. until England win it again!

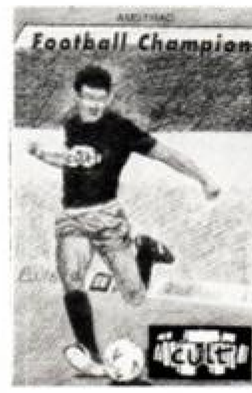
The package will have rights to use any of the players named in the final England 22 for Italy, with realistic injury stats so that if Barnes is injured, for instance, you can play Neil Webb (no relation!). The licence also gives Grandslam's little baby a greater life expectancy than certain Italian-based games one could mention.

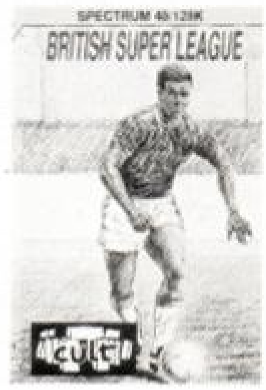
Soccer is not only set to take over the full-price sector this summer – the budget ball boys are out in force too! The obvious front-runner in the field has to be *Matchday* from the Hit Squad. A midly famous footie sim (it was quite simply the first really good soccer game on the CPC), this old rave (89%, *AA2*) hits the streets at an amazing transfer price of £2.99.

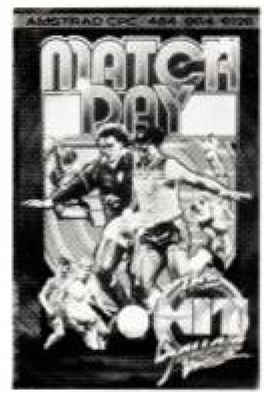
Cult, the sports management specialist, is knocking on the soccer door too. It has pulled two sims from the fire to keep the players amd managers alike busy over the summer lay off. *British Super League* and *Football Champions* should both test footballing instincts to the limit. The first is a forray into a mythical 16-way challenege against the very cream of UK soccer, while *Football Champions* lets players explore the mysteries of the lower divisions as well as the glories of the first. Both retail at £2.99.



● Are England heading for a kicking on-screen as well as on the pitch?







Sierra loan

Thalamus has borrowed the keys to a Q8 Ford Motorsport Sierra RS Cosworth 4x4 and is offering CPC owners a spin in its new rally sim.

Called (not surprisingly) *Q8 Team Ford Rally*, it gives the computer driver the opportunity to throw thousands of pounds' worth of expensive metal around at high speeds over three completely different tracks. With three levels of difficulty, it even allows drivers to deviate from the set course in search of a better time – but at the risk of anatagonising the Old Bill. Spectators are even reported to wander onto the pothole-filled track (much like an Avon County Council A-Road). The rally, maps and all, should begin later this summer.

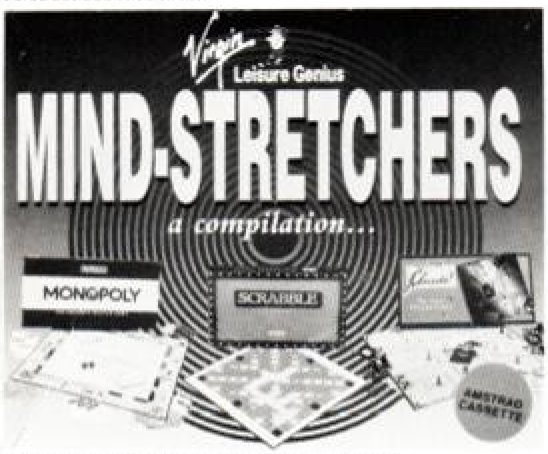


● Push pedal to the metal with Thalamus.

The pack is back!

Due to the unprecendented success of the three-pack of *Monopoly*, *Scrabble* and *Cluedo* last Christmas, Virgin has bundled all three properly together for the first time and called them Mindstretchers.

At £19.99 for either the tape or disk pack, it may be a pocket-stretcher but should also bundle in enough long-term board game amusment to make wet Sunday afternoons a thing to look forward to!



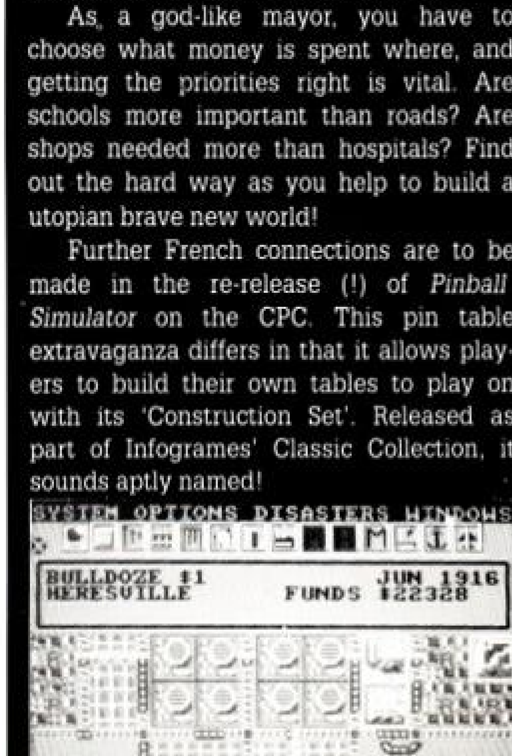
● Mind-broadening software from Virgin.

Town Planning

Sim City, the award-winning simulation of city development, is undergoing its CPC conversion. French funster Infogrames should have the game with us shortly.

As, a god-like mayor, you have to choose what money is spent where, and getting the priorities right is vital. Are schools more important than roads? Are shops needed more than hospitals? Find out the hard way as you help to build a utopian brave new world!

Further French connections are to be made in the re-release (!) of *Pinball Simulator* on the CPC. This pin table extravaganza differs in that it allows players to build their own tables to play on with its 'Construction Set'. Released as part of Infogrames' Classic Collection, it sounds aptly named!



● Infogrames' *Sim City*: Beats Lego any day.

REACTION

There's so much mail this month *Reaction* has had to spill out over four pages!

● Complete madman

Yo *AA*! Here is my prediction for the year 2001 (if the planet is still around):

TOP 10 CHART

1	Computer Hits volume 106	**Beau Jolly**
2	Professional Mindless Violence Sim	**Codemasters**
3	Professional Simulator Simulator	**Codemasters**
4	Joe Blade 26	**Players**
5	Space World Dizzy	**Codemasters**
6	Robocop	**Ocean**
7	Space Invaders	**Hoarysoft**
8	Formula 1 Simulator	**Mastertronic**
9	Professional Bootboy Simulator	**Codemasters**
10	Pong – The Official Version	**Hoarysoft**

And to round things off, a heavy metal poem: (Take it away, Cyril!)

There is no better than the CPC
Get one – I'm sure you'll agree
You want proof? Proof I'll give
Get an Amstrad, then you'll live
The colour's amazing, the sprites are smooth
And by lummie they can move!
It's got a mega sonic chip
The sound produced is really hip
It comes complete with 12 games free
Yup! All good but nowt on the fee
With all that backup I'm sure you'll agree
There is no better than a CPC
(Cliche) Go on – just buy an Amstrad
It'll be the best computer you've ever had
The wild graphics will drive your retinas mad!
And it won't be just a passing fad!

PS: I'm in a manic state of depression, my funds are low and I'm one sarnie short of a picnic. Maybe the undoubted pleasure of software winner will make a happy man of me.

Paul Stapleton
Brighton

● Autumn upgrade?

I have been thinking of upgrading my Amstrad 6128 for a 16-bit computer. But then hearing the news of the new Amstrad coming out in the Autumn, I have decided to wait. But one thing I would like to know is whether I can upgrade my old Amstrad with an expansion ROM to plug in the back of the computer, instead of spending a lot of money to buy the complete new system.

Adam Baird
Harpenden

AA: Afraid not, Adam. As we understand it, the hardware enhancements the new machine will feature go a lot further than extra RAM or ROM.

● Angela Allum lives!

That may seem a strange heading to you, but recently someone sent a package to me but it was returned marked "Deceased"!

I can assure everyone out there that I am alive and kicking. Actually, I am self-employed on the Enterprise Allowance Scheme and am worried in case other packages and letters have been returned in the same way.

I've told the Post Office what's happened, so it should get sorted out. So if anything you've sent me has been returned, try again – I'm not dead!

Angela Allum
22 Point Royal
Bracknell RG12 4HH

● Ageist attitudes

I am a 12-year-old boy and I am sick and tired of the way I get treated like a ninth-class person. Last Monday I went down to a certain computer shop to see what software they had. When I asked the nice (?) man behind the counter if they stocked *The Pawn*, he went off to show another customer an ST! Am I a leper? Do my socks smell? I wish that computer shops would treat under-16s like normal people.

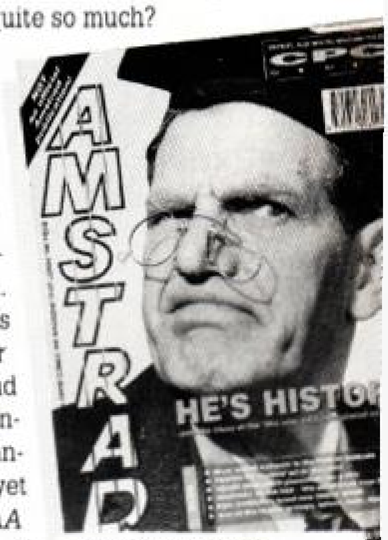
Robert Melody
Purley

AA: The reason you don't get treated like a normal person, Robert, is you don't look like you've got money. There will always be some shops where the assistants make a beeline for big-spenders, never mind who was there first. Of course, it backfires on them in the end. If you get bad service when you're 12 years old and shopping for software, you're not going to go back there when you're 18 and shopping for hardware, are you? I hope all you retailers out there are listening...

● And another thing...

What has happened to *Helpline*? The *Line-Up* in the February issue was up the spout completely – *Helpline* p63, OK, so it's not there, but you're allowed to make a few mistakes. On page 63 we have *Small Ads*. In the *Line-Up* it says *Small Ads* is on page 30, so methinks it might have got mixed up with *Helpline* but I found the end of the public domain feature. *Helpline* is nowhere to be found, and no mention of its untimely demise. Let me predict your answer – "ran out of space", perhaps? OK, so where was it in the March issue? It didn't even make it onto the *Line-Up*. How are we supposed to make friends and establish contacts within the CPC user field if you cut it out?

Advertising has become slightly annoying as well. Of last month's 83 pages (a fine figure) just over 30 per cent was advertising. Don't kid us – the majority of us are extremely intelligent – you must make a small fortune from advertising so why the high percentage and increasing cover costs? Paying £1.45 for *AA* does not bother me, but the reasons do. It would follow (begrudgingly or otherwise) that if adverts increase, the cost can be allowed to fall and vice versa. We do need advertising, I admit, but do we need quite so much?



● What's wrong with AA? Mike Wheeler tells it how (he thinks) it is...

And then there's *Type-Ins*. Turning to page 62 last month threw me back about four years in magazine progression. In '86, magazines such as *Your Computer* and *C&VG* were constantly condemning "listings", yet they return in *AA* to haunt me in 1990. *Type-Ins* used to be a section where one could move aside commercial programs and spend an hour or so tapping in interesting programs which were worth keeping. Do we care what day the 15th April 2004 will be? Of little use, I fear. Listings should take minutes to type and be less daunting than a whole page of digits that looks like it's taken half an hour to download from Micronet...

Mike Wheeler
Cheam
Surrey

AA: Mike's letter did go on a bit longer, but there wasn't enough space to print it all. He also criticised Emma Broadley's column, the Buyers Guide and recent covers, although offering a few good words about other aspects of the mag. The points above are probably most worth commenting on, however. For a start, there's Helpline...

Occasionally it is necessary to drop certain pages. It's a shame Helpline *had to be dropped two issues in a row, but you can rest assured it was done only because on each occasion something else came up which we thought deserved to go in instead.*

Sorry we got the Line-Up *wrong, but then the magazine isn't put together all in one go. Some pages are done one day, some another. Now and again cock-ups are inevitable. The only way to avoid them altogether is to introduce lead times of eight or ten weeks, and absolutely refuse to alter your issues once they've been planned, regardless of what happens in the meantime. Safe, sure, but boring as hell.*

And if you think 30 per cent ads is a high ratio, Mike, then you obviously don't read many magazines! The usual proportion is more like 40-50 per cent. You're right that we do make a small fortune from advertising – but it also costs a small fortune to print 50,000 copies of a 100-page magazine and distribute them to thousands of outlets around the country. Perhaps you hadn't thought of that. The cover price helps, but it's nowhere near enough on its own. Besides, you seem to take the opinion that advertisements are useless to the reader. That in itself is absurd – they're an invaluable source of information on the latest products, prices and availability.

Finally, you don't like Amstrad Action's *listings. That's fair enough, everyone looks for different things in magazines. And besides, we're not remotely interested in what* Your Computer *and* C&VG *say (*Your Computer*? – whatever happened to that?). Listings are just as popular now as they were in 1986 – it's just you, I suspect, who's got bored with them. We get new readers all the time – we can't just plod on catering solely for the changing tastes of our original ones.*

● Budgets on disk?

In my March '90 *AA* I was reading the cheat mode for *Fantasy World Dizzy* and I would like to know if you can buy the *Dizzy* games on disk for my CPC 6128. If so, could you tell me where? You also had an advert on page 15 about some games from The Hit Squad costing £2.99 each. Are these on disk and if so how do I obtain them?

J Littlefair
Dulverton
Somerton

AA: Unfortunately, budget games are always supplied on tape because it's the cheapest way. You can occasionally transfer them to disk yourself, but for the most part it's simply impractical.

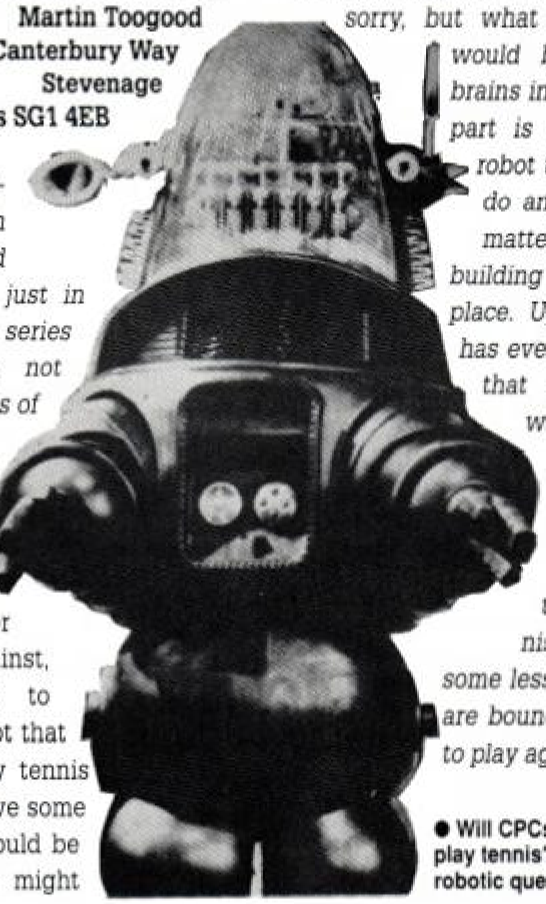
I'm afraid you'll simply have to settle for loading them up from tape.

● Attack of the robots

I am an electronics apprentice trying to design and build a mini robot arm for my Amstrad CPC 6128. I was told that to be able to do this I would need a 'black box' plugged into my computer. I then remembered your major advertiser, Datel Electronics, and that they had a 'box' called 'Robotek' which seemed ideal. I rang Datel Electronics only to get the reply that they no longer sell them. *AA*'s back pages make no mention of the ROM, either. Can anyone help me and end my despair? Perhaps *AA* could start a series on the subject, like DTP?

Martin Toogood
482 Canterbury Way
Stevenage
Herts SG1 4EB

AA: Well, is there anyone out there who can help? We've printed Martin's full address, just in case. As for running a series on robot arms, we not entirely convinced that's of mainstream interest, Martin. But of course, if you all write in...



● **Will CPCs have arms? Will robots play tennis? These, and many more robotic questions answered...**

I am a young girl who likes tennis but never has anyone to play against, so I have decided to attempt building a robot that is programmed to play tennis on different levels. I have some idea how to start. I would be most grateful if you might know how to program it, what sort of materials I will need and how to construct the body. It does not matter what weight and height it is, but the cost should be as low as possible.

I know that you are very busy, but if you could take the time to write back giving me some advice I would be very grateful.

Sara Manning
Royston
Hertfordshire

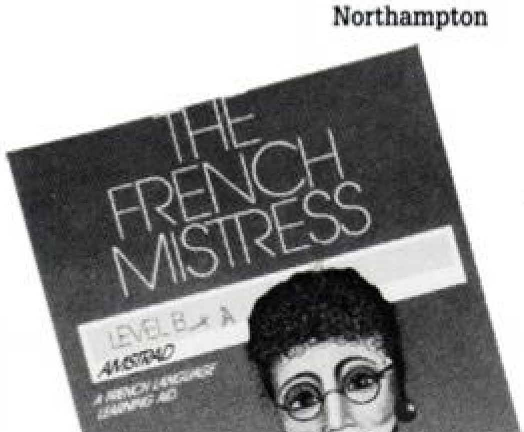
AA: Our advice is to forget it, Sara! I'm sorry, but what you want to build would be beyond the top brains in the world! The hard part is not programming a robot to play tennis – or to do anything else, for that matter. The hard part is building a robot in the first place. Up until now, no-one has ever constructed a robot that can stand up and walk properly, let alone run around a tennis court knocking balls back and forth. Our advice is to go and join a tennis club, Sara, or take some lessons at school. There are bound to be other people to play against there.

● Quel horreur!

If "Francais au Anglais" is a sample of the standard of its grammar, I don't think you should recommend *The French Mistress* to your readers! (*AA*55, page 18 – *AA*'s faves.)

This should, of course, be "Du Français à l'Anglais" – although I think most people would just say "Français/Anglais".

Mrs P Russack
Northampton



● ***The French Mistress*** **sets a bad example, says Mrs Russack.**



● 464 upgrade

In 1987 I was given a CPC 464. I've enjoyed using it but a lot of the software I want to use is only for the 6128, and is usually on disk. Please could you tell me what I need to upgrade my 464 to a 6128?

James Ditton
Ashingdon
Essex

AA: The major differences between the 6128 and the 464 are that the former has an extra 64K of memory and a disk drive. A plug-in 64K RAM expansion module and an Amstrad DD1 external disk drive will let your 464 run the majority of 6128 software. The other difference between the two machines is the built-in ROM. Some software designed for the 6128 may simply be incompatible with the 464's ROM. Until recently you could buy these 6128 ROMs, but a licensing row between Amstrad and the suppliers has scotched that, I'm afraid.

PUBLIC SPEAKING

● PD on tape

I have started to distribute PD software on cassette for the CPC. As yet, nobody knows about me, so I would appreciate it if you would give me a mention in your mag.

To receive public domain software, send a blank cassette, 40p for duplication and an SAE. I will return your cassette with loadsa programs.

I am also on the lookout for PD software, and would appreciate any donations. Send them on a cassette and include an SAE.

Alan Scully
119 Laurel Drive
Greenhills
East Kilbride
Glasgow G75 9JG

● Datafile upgraded

I am glad to see that you published details of my public domain program *Datafile* in *AA*55.

I have upgraded this program with an option to tabulate records, a status bar at the top of the screen showing free bytes, record number etc, and data records placed centrally on the screen and boxed for improved appearance.

I also started to write a version that would use the second 64K on a 6128 to store the data, instead of storing in an array as *Datafile* does. I have used the same format to save the data to disk so databases can be read by either program. This will allow more database facilities to be included without losing any of the memory available for data. I am calling this version *Rambase*.

If any of your readers would like a copy of my latest version of *Datafile*, or my progress with *Rambase* to date (both of which I return to the public domain), then I will gladly supply them if they send me a disk, stamped addressed envelope and, say, a first class stamp to cover my copying costs. Perhaps in return they will do some of the programming of *Rambase* and again return it to the public domain. Note that *Rambase* requires BANKMAN.BIN on the same disk (*not* public domain, as far as we on *AA* are aware).

John Fairlie
20 Montague Road
Saltford
Bristol BS18 3LA

● Public concern

My friend and I are setting up a public domain library for Amstrad CPCs and we wondered if you could give us some hints, tips and advice.

The first query is, are the *Type-Ins* and cover cassettes public domain? I know that they are downloadable from Cynotel and so I presume that apart from the demos they are, and we can use them.

Also, is it legal to add REM statements to other authors' programs and then sell them? For example, we were thinking of putting when and where the program came from.

We also wondered if it was allowed for us to get public domain from *Wacci* and other such PD libraries and make copies for us to distribute?

Thank you very much for your help and you will probably hear from us in the near future when we have set up our library, as we plan to form a bulletin board and many other extremely mind-blowing ventures.

Chris Pendsé, Richard Hall
Chalfont St Giles
Bucks

AA: Firstly, AA Type-Ins *are indeed public domain, as are programs given away on AA cover cassettes. As you rightly say, however, the demos of commercially-available games, like* Shinobi, The Untouchables *etc are most definitely NOT public domain.*

As for adding REM statements to other authors' programs and selling them – NO! If the original author is selling their program it is illegal for you also to sell it, modified or not, without reaching some agreement with the author. And if the author has written the program specifically for the public domain, it completely illegal to SELL it.

There's no problem with you collecting PD software from other libraries and then distributing it yourself. In the case of Wacci, however, make sure it is PD software, because the company also sells a range of cheap (not free!) software at similar prices.

Finally, good luck with your bulletin board, and we look forward to having our minds blown...

● 70 programs for 50p

I have put together another disk full of programs (70 altogether – mostly games) which I will copy for anyone sending me:

1. A disk (blank both sides)
2. A 50p coin (copy charge)
3. An SAE

The 70 programs are from various magazines and take up *all* 356K of disk space. *All* programs contain instructions, and are easy to load. Just put your disk into the drive and type: `RUN "MENU"`. You now select the program you require from the list. The disk also contains a mega 40K+ program of mine called *Forcefield* (saved as "SPACE") on side 2 of the disk.

David Hall
12 Stothard Road
Stretford
Manchester M32 9HA

AA: You are sure that all those programs really are public domain, aren't you David? Anyway, that's yer last free plug. Next time we'll tap you for a fiver to go in Small Ads.

● Too much throttle!

I have a CPC 6128 and I recently bought a game called *Night Raider*, which is made by Gremlin Graphics. In order to start the game you need to take off from an aircraft carrier, but whenever I attempt to take off, following the instructions fully, I find that the plane crashes even when I pull back on the joystick – which should cause the plane to ascend. Can you help me please? Have you or any of your readers got any experience of this game on a 6128?

Lawrence Vousden (0322 56503)
Bexley
Kent

AA: Ah, now, I just may be able to help you here. I've played Night Raider *myself (and got within an ace of sinking the Bismarck, ahem, ahem...) and I also had this crashing problem. Unless I'm very much mistaken, your trouble is simply that your engine is blowing up! You need to select full throttle to get yourself off the deck of the carrier, but once you're in the air you must throttle back to around two thirds or three quarters to stop your engine from being overloaded.*



● **Do you blow up as soon as your Avenger leaves the deck in *Night Raider*?**



● Improper argument

I have spend two hours typing in *Connect Four* (*Type-Ins*, *AA*54), only to discover that the bloody thing doesn't work! When I run the program it says "Improper Argument in line 50", or words to that effect. I would be most grateful if you would print an amended line 50 in your outasight mag.

Neil Quinney
Alloa
Scotland

AA: Aaaarrrggh! – It does work, it does, it does! Be honest, Neil, did you use Typewriter *to check your typing? Do all the codes match up. We should add that the old "Improper Argument" doesn't necessarily point to a mistake in the line quoted – it could easily be somewhere else.*

● The train now standing...

In reply to P Windle (*AA*55) about British Railway games and simulations, I suggest getting in touch with **A Greenup, 20 Moorville Drive, Carlisle CA3 0AN** for a very good and accurate selection of railway games.

Most are of the nature of rail traffic controller series, where you control train movements over a given period.

Steve Ellis
Eastbourne

● Long live fun

I am writing to you about three things. First my compliments on the new image (well, sort of) of the magazine. The pokes are FANTASTIC, the reviews are top-class, the subscription system of getting a free game is great and everything from *Small Ads* to *Type-Ins* is absolutely amazingly superbly mega!

Secondly, I am going to tell you about the durability and reliability of the Amstrad CPC. I have had mine for four years and have never had a fault. EVERY game has loading, none of the keys have ever messed up on me and my mates' Speccies have been repaired at least twice.

Last and least (sort of), tell Mr Peter Dean Kimmings RD where to stuff his complaints. If all he is bothered about is serious stuff then I recommend he buys *Computer Express* or *Computer Shopper*. What a grouch.

David Lent
Grimsby

● Blue War plea

Can anyone supply me with a copy of *Blue War* on disk? A friend of mine lent me his, and somehow it has become corrupt. I have tried to get a replacement from the Amstrad User Club, and from various software dealers, but they all tell me that it has been discontinued.

DJ Pratt
24 Hawden Road
Tonbridge
Kent TN9 1JN

● I require advice...

With reference to your offer of adding a few additional comments, I would like to tell you that I am very interested in setting up my CPC464 Green Screen computer into a business computer. I have no printer or disk drive and I wrote to your *AA Buyers' Guide* over three months ago seeking information on which printer and disk drive I should buy and how much I should pay. I am looking for a disk drive with the same size disks as fits into the disk drive on the CPC664 or 6128.

I would also like to make known to you that your magazine is sending with it a leaflet referring to a computer club that is only open to residents in the UK. I don't think it is fair and I'm sure you've many subscribers who would just love to join it.

I also sent a letter to MJC Supplies similar to the one I sent to your *Buyers' Guide*. I got back a price list and on it a note saying that if I want more information I would have to send them an SAE. I'm sure you will be able to see to my requests.

JC Farrell
Newtown
Eire

AA: I think you misunderstand the nature of the Buyers' Guide, *Mr Farrell. We print a list of the software and hardware items we would recommend as best buys purely so that people don't have to write in to us to find out. As for MJC asking for an SAE, we're not surprised. So would we.*

Anyway, all that's by the by. If you plan on using your Green Screen 464 for serious applications you will have to invest in some additional hardware. For a start, as you say, you will need a disk drive. The one you need is the Amstrad DD-1 unit, which sells for approximately £150 – but you do get the necessary interface which will enable it to work with your 464. On top of that, most serious business software requires the extra RAM memory of the 6128. You can upgrade your 464 to 128K with Datel's (which advertises in AA*) 64K memory expansion pack for £50. These two items cost between them £200, and we really wonder whether you wouldn't be better off selling your 464 and simply buying a 6128. Your final requirement is for a printer, and here we would recommend the Citzen 120D or Star LC-10. Both of these have a list price of £200, but by shopping around you should be able to get them for around £40 or £50 less.*

● The wheel thing

Whilst playing in the arcades I spotted a game called *Chase HQ* so I had a go and after wasting about £5 on it I got my dad to drive me to the nearest computer shop to buy it.

Now after playing in on my Amstrad 464 I still go back to the arcades to play it. Why? Because I prefer using a steering wheel to control my turbocharged Porsche. Now to my question. Does Amstrad make a steering wheel that fits on the 464? If there is such a thing, how much would it cost me and where might I get one from?

Robert 'empty pocket' Bryant
Whitstable
Kent

AA: The nearest thing we can find is the Euromax Racemaker control yoke. It'll set you back £29-£31 depending on whether you buy it in the shops or direct from Euromax (0262 601006).



● The Euromax Racemaker is a close as you'll get to a steering wheel on your CPC.

● SDC complaint

On the 14th of November I ordered *Powerdrift* and a Cheetah joystick from SDC, who advertise in your magazine. But by the 13th of December I still had not received either. I phone them and they said the game had already been posted and that the joystick was out of stock, but would be in within the week. Three days later, *Powerdrift* arrived, but no joystick.

Almost a month later the joystick still hadn't arrived. I tried to phone them, but they were always engaged, so I wrote to them saying that I wished to cancel my order and receive a refund. Since I wrote to them in January I have heard nothing from them. Please help.

Matthew Oxlade
Tiverton
Devon

AA: We've had many, many complaints about SDC, the vast majority of which have been successfully sorted out by our Advertising Manager, Elaine Brooks. We no longer take advertising from SDC, and as a result it's much harder for us to get any action from the company now. Sorry, but we've done pretty well all we can.

● Syntax error

I have bought your magazine for the last two months and find it very interesting, but I tried to program "Typewriter" and "Type-Ins" into the computer, but after I had copied it all on the screen and double-checked, I ran the program and it said "Syntax Error in 10". Please tell me what I did wrong.

I didn't type the four-letter code in, so I don't know where I've gone wrong. I haven't a disk drive or anything else yet, as I'm trying to understand programming but with great difficulty.

Helen Rice
Swanse

AA: The problem with typing in programs, Helen, is that you have to type the lines in EXACTLY as they are written. It's unfortunately all too easy to mistake, for example, the letter "l" for the number "1" and vice versa. The "Syntax Error" means your spelling is wrong or you've missed something out. You'll just have to check and double-check, I'm afraid...

Which is why we've developed the Typewriter *program. What this does is process a listing you've just typed in to generate codes at the start of each line. You then compare these codes with the ones printed in the magazine and they should agree. If they don't, it means you've typed something wrongly in that line.*

However, your best bet is simply to sit down with the manual and learn all about BASIC*. It's a long-winded job involving much trial and error, but worth it in the end. Who knows, you could end up writing* Type-Ins*!*

HELPLINE

Feeling helpful? Just send your name, address, phone number (say if you don't want it printed) and subjects on which you're offering help to: *Helpline*, Amstrad Action, Beauford Court, 30 Monmouth Street, Bath, Avon BA1 2AP. Please write on a postcard or the back of a stuck down envelope and keep it short or you won't get in (or you'll get cut to 'loadsagames').

If you want help contact the appropriate Helpliner – not us. By post include a self-addressed, stamped envelope for the reply – or you won't get one. And phone only in decent hours!

Piracy is not welcome: don't try it, you'll get booted off. Keep it legal. And if you receive SAE's, for heaven's sake return them with some acknowledgement. Finally, if you want to come off *Helpline* just write in and say so.

Pokes and cheats wanted for *Karnov* and *Biggles* + what's the Level Two password on *The Vindicator*?

M Falco, 12 Albert Rd, South Woodham Ferrers, Chelmsford, Essex, CM3 5LP.

I have pokes, maps and tips for *Dragon Ninja, Renegade III, SAS Combat Sim, Ninja Massacre* and loads of others. Send SAE and tape (optional). Penpals wanted aged between 12 - 19 to swap games and tips. 464 only.

Paul Forder, 6 Maple Walk, Ripon, North Yorkshire, HG4 2ND.

Tape versions of *Rygar* and *Professional Adventure Writer* wanted. Eventually swap with *Fiendish Freddy* and some other games.

Morten Buabjerg, LA Ringsvej 143, 1 TV, 5230 Odense M, Denmark.

Help needed on *Treasure Island Dizzy* and hints, tips and maps for *Never Ending Story*.

Peter Andrews, 2 Glastonbury Close, Habberly Estate, Kidderminster, DY11 6EP.

Wanted, *Battle of Britain*, tape or disk.

N Bragg, 20 Pound Close, Abbey Manor Park, Yeovil, Somerset, BA21 3SD.

Could anyone with back issues of *AA* contact me please!

Darrell Young, 23 Grovesnor Rd, Leyton, London, E10 6LG.

Does anyone have the reels to Amsoft's *Fruit Machine*, and does anyone know where the secret rooms are on *Rainbow Islands*?

Write to Joeseph Taylor, 42 Larch Ave, Acton, London, W3 7LH.

Desperately needed *AA*46 or photocopy of page 24, i.e. *Colour Dump* review. Willing to buy or borrow. Also *Protext* on tape needed.

Dennis Thorpe, 91 Westfields, Narborough, Kings Lynn, Norfolk, PE32 1SY.

I will send you a list of all the cheats I have if you will help me with *Arkanoid*. I would love for it. You can choose a few cheats if you help me!

Michael Barin, 34 Marestones Dr, Cheltenham, Glos.

Help! I need any Madonna unwanted records singles etc. I will pay 50p per single or cassingle. £2 for a 12" single and album (vinyl) and £4 for a CD or will swap for posters of your favourite star.

F McIntyre, 14 Poplar Way, Kirk Hallam, Ilkeston, Derbyshire, DE7 4NP.

Penpal wanted who has got a CPC 464 and is 13+ and male. Has anybody got *California Games* on cassette?

Ben Edwards, 32 Kenning Rd, Hoddesdon, Herts, EU11 9HE.

Penpal needed aged 11 - 13. Must know quite a bit about Amstrad BASIC. Also Sept-Feb *BAU* (magazine) for sale. Send SAE.

Chris Small, 110 Oxford Rd, Moseley, Birmingham, B13 9SQ.

Help with over 170 games, old and new. Please state tape/disk. Also have 50+ Multiface pokes. Will help with most problems in BASIC. No SAE no reply.

Andrew H, 21 Wayside, Marston Green, Birmingham, B37 7AY.

Poke needed for *Strider, Forgotten Worlds* and *Ghouls and Ghosts* on tape. Will pay reasonable price. Also female penpal wanted aged 15 – 20 to swap pokes and games.

Ayden Clarke, 1 West End, Ely, Cambs, CB6 3BY.

Help wanted: Writers for new 8-bit user group fanzine, named *Re-Run*. For more details write to:

Re-Run, 1 Northolme Close, Grays, Essex, RM16 2NX.

Help wanted on *Ghostbusters 2* on Level 1 and 2, exchange for pokes.

Jason Windett, 2 Northview Close, Bath, Avon, BA2 1EH.

Help new fanzine, *Review* needs *Type-Ins*, home-brew software. If interested send me your stuff. Send SAE for more information.

S Williams, Review, 24 Chalcot Drive, Hedensford, Staffs, WS12 4SF.

Help wanted on *Knightmare, Renegade* and *1943*. Help given on *Lord of the Rings* and *Chase HQ*. Multiface pokes given on *Wizard Willy* and *Hit Squad*. PS all help is free!

Alex 'Dodo' Doehler, 136 Birchfield Rd, Headless Cross, Redditch, Worcs, B97 4LT.

Penpals wanted. 19 year old 6128 owner. Any country. All letters answered.

Mark Carey-Smith, 133 Oliver Street, Grafton, NSW 2460, Australia.

PD software on cassette wanted. Send software on tape and an SAE if you want it returned. Send a blank tape if you wish to receive some software. Utlities especially wanted.

Graeme Chesser, 44 Echline Grove, S Queensferry, West Loathian, EH30 9RU.

Does anyone have a copy of *Elite* (with all instructions) on tape for the 464? I am willing to pay a reasonable price.

Steven Gray, 35 Claremount Place, Aberdeen, AB1 6RE.

HELP wanted on *Lancelot*. I am coming to Camelot, what then? The guide does not help me!

Inge Botofte, Fredeiiksbosgvej 25, DK-3600, Frederikssund, Denmark.

Wanted: any *AA* covertapes except *AA*28, 52 and 49. Will gladly pay.

Alan James, 35 Brannock Ave, Newarthill, Motherwell, Lancs, ML! 5DW.

Wanted – any home-grown software. Pokes, maps, basically anything for the 464 and 6128 tape or disk. I don't care. In return I will debug your software and give help on *Dizzy 2* and *3*. Competent commanders with ECM'S, Fuel Scoops, military lasers etc on *Elite*. Help also given on BASIC. I can also put you in touch with loads of shops if you have trouble finding things.

Gumroth, 36 Llanthewy Rd, Newport, Gwent, NP9 4LD.

Help needed on *Treasure Island Dizzy*, and pokes wanted for *Operation Thunderbolt*.

Richard Dziegel, 89 Langdale Road, Mereside, Blackpool, FX4 4TY.

Help wanted on *Knightmare*. Any hints or tips?

Kevin John Williams, 10 Trem Y Mor, Rhosneigr, Anglesey, Gwynnedd, LL64 5QR.

Penpals wanted for Psion Organiser II programmers (with CPC) for swapping tips, programs, ideas etc. Please include SAE.

Sam Walker, 3 Tetbury Street, Minchampton, Glos, GL6 9JG.

Free help! 5,000 plus cheats, tips, maps, type-ins etc. All letters answered. Send SAE and list (please keep them short). If I can help, I will.

John Baker, 8 Alton Road, Selly Oak, Birmingham, B29 7DU.

Scapeghost, Avon, Bard's Tale - beginners help now available. Helpline club, tested listings and pokes. Also flowcharts.

Angela Allum, 22 Point Royal, Bracknell, Berks, RG12 4HH.

Penpals wanted for games and swaps. I have over 160 games, I'm 11 and own a CPC 664, Multiface II and a tape deck.

Duncan Ward 129 Eastwood Road, Boston, Lincs, PE21 0PW.

I will write the program you need! Just send me an SAE with details of the program you want.

Keith Grimsditch, 12 Reddish Vale Road, Reddish, Stockport, SK5 7HE.


EVERY CITY HAS A MEAN STREET
SHADOW Warriors
SHADOW WARRIORS, THE LATEST, GREATEST AND MOST AMBITIOUS MART ARTS COIN-OP GAME NOW RAGES O YOUR COMPUTER – FEATURING
INTERACTIV
SCENIC BACKDROP
THE SECRETS OF THE NINJITSU TECHNIQ HAVE BEEN HANDED DOWN SINCE THE MEDIEVAL WARS... NOW THEY LIVE IN THE JUNGLE OF THE AMERICAN METROPOLIS.
A THOUSAND YEARS OF THE NINJIT SECRETS AT YOUR FINGERTIPS... THE
PHOENIX BACKFL
TRIPLE BLOW COMBINATION, FLYING N THROW,
HANG KIC
AND MORE, GIVE YOU A FORMIDA ARMOURY OF STUNNING MOVES.
TAKE YOUR TECHNIQUES TO T STREETS
SHADOW WARRIO
... THE HERO OF THE
NINETIES
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Ocean Software Limited
6 Central Street · Manchester · M2 5NS
Telephone: 061 832 6633 · Telex: 669977 OCEAN
Fax: 061 834 0650
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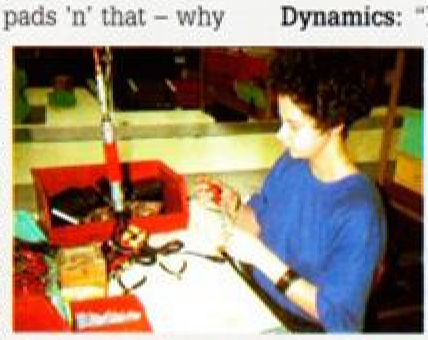
Give 'em stick!

Surely a joystick is a joystick is a joystick...? No? Indeed not. The right joystick can mean the difference between becoming a ninja warlord and having yer kipper staved in by a bunch of psychotic street thugs. It can mean the difference between a pat on the back from Chuck Yeager and a smack in the undercarriage from 200,000 tons of runway. The difference between collecting all the bits to your chrono-syclastic transmutation spigot and being vapourised by a neutron beam. Basically, the right joystick could save your life. *Amstrad Action* looks at one manufacturer that's made the same joystick for eight years, a one that can't make the same joystick for eight minutes, and one that blooming well expects you to make your own...



● The long-running Competition Pro from Dynamics

Joysticks come and joysticks go... except, that is, for Dynamics' Competition Pro Series. Dynamics is one of the UK's top joystick producers, yet has stuck with essentially an unchanged design for eight years. Never mind all the fancy gimmicks, daft handles, turbocharged suction pads 'n' that – why does one of the UK's top joystick manufacturers stick by a design that – incomputing terms – is straight out of the ark? Must be for a reason, we thought. They must know a bit about what makes a durable, quality joystick (we also thought). So we packed our sandwiches and reporter's notebooks and went up to Dynamic's factory in Oldham...



● Even in this day and age, joysticks are still made by hand.

Amstrad Action: "Right then. Apart from a great big noisy factory, what do you need to make a joystick?"

Dynamics: "First we need to buy all the parts, though we manufacture as much as we can ourselves. And before we accept any product that anyone sends to us, everything is tested thoroughly to make sure that it's up to the standard we require. Obviously when you get half a million microswitches through the door you don't check out half a million microswitches. You would take a sample of those and make sure they're up to the specification that you ordered in the first place.

"This is why we give a two-year guarantee. We've got faith in our components. We know that the parts have been tested, that the assembly has been tested, and the finished product has been tested.

Amstrad Action: "So you've got all the bits – what next?"

Dynamics: "They go to the assembly line. At the moment they're assembling black and clear components for the Competition Pro 5000 and the Pro 5000 Clear.

Amstrad Action: "So it's just like a production line in a car, factory then. Only there obviously aren't as many parts."

Dynamics: "Right. Each person on the line is doing a job then passing it down the line. It varies, you can have the whole line doing a certain job. The other line will be making, say, the Extra joystick, the Glows and so on.

"This is the the finished, moulded case. [We start moving down the production line.] And that's made in our other area. Here, they are just fitting the rubber bushes onto the handles and then passing them down the line...

"The steel handles are not just any steel, but are actually plated. Nobody sees this part. We insist on having it plated because it looks better and lasts that little bit longer. Also, the friction on the rubber is that much better...

"The next stage is to wire up the switches. Once that's done, they fit the four microswitches to the handle, and then the loom is wired... [Our tour of inspection continues.]

"Now you'll see something soon that possibly not every joystick manufacturer does. Each joystick is actually tested. First we check the firing buttons are working, and all the movements on the handle...

[Sure enough, the finished joystick works.]

"And that's one finished joystick ready to go. Every joystick we make is tested. All the components are tested on the way in, and everything's tested on the way out. And that's why we have a two-year guarantee.

Amstrad Action: "It all looks highly automated. You must produce a lot of joysticks over the course of a week, say."

Dynamics: "We have up to about a hundred people making joysticks here. We can do over 150,000 joysticks in one month. That's how we are able to compete with the oversea markets. We can beat the Taiwanese to it on quality and price. Joysticks made here go all over the world. We have subsidiaries in Germany, Chicago, Spain and France."

Amstrad Action: "You're obviously happy with the quality of your joysticks, and you offer this two-year guarantee. But how long do they really last?"

Dynamics: It's hard to estimate. If you use it properly it should last you a lifetime – almost. If anything goes it'll be the most vulnerable part, the one that receives more pressure than everything else – the switches. Our microswitches are expected to last for three million operations.

Amstrad Action: "Hmm, yes. But we can't help noticing that apart from the colour, all your joysticks are, well, they're all the same, aren't they?"

Dynamics: "Yes, but we're working on the best design. I'm not using the word 'old'. There's still a huge market for it. Our joystick is

BUILD YOUR OWN JOYSTICK!

Joysticks don't just grow on trees, you know, or appear out of thin air. Oh no, they have to be assembled from literally millions of tiny components (*called atoms – ed*). These hundreds of individual bits must be carefully split up into complete sets, each containing as many as a dozen bits... OK, joysticks are actually made out of only a few discrete components. Back at the joystick factory, teams of technicians assemble these components – microswitches, fire buttons, connectors etc – by hand before popping them into the boxes and sending them off to the joystick shop.

But one manufacturer – Sonmax – lets you cut out the middleman and assemble your very own waggler.

Yes, it's true – now you too can feel the thrill experienced by Sir Isaac Newton as he assembled the first 24-inch Cassegrain Reflector at Mount Palomar, the same thunderous ecstacy as Albert Einstein when he popped the last rivet into the 10 billion Gigawatt nuclear cyclotron at Macclesfield Junior School, the same wild abandon as Sir William Herschel when he finally got his internal combustion engine working... you too can join these scientific giants by assembling, with your own bare hands, your very own... *Sonmax Sureshot.*

We knew you'd be impressed.

Sonmax is selling all the little bits and pieces you need to construct your very own waggler for a very much reduced £7.95.

Mind you, although the instructions are pretty comprehensive and looked foolproof enough, we decided we ought to put the Sureshot kit to the test...



1 To start with, make sure you're properly equipped. Although the kit is designed to be assembled by complete dunces with fingers like bunches of sausages, it doesn't hurt to be prepared...



2 The components should separate easily. If not, apply gentle force *where necessary.*



3 If you do have to use any additional tools, make sure they are of the size and accuracy required to deal with delicate components.



4 Wiring up the microswitches is easy if you follow the wiring plan carefully and systematically.



5 Finally, the assembled components should be fitted inside the casing, and the wiring loom arranged so that it doesn't foul the internal locating pegs as the two halves are brought together.



6 The finished result – yes, it really is that easy!

The works...

Most modern microswitch joysticks have a similar fundamental design. The Sonmax Sureshot DIY joystick kit demonstrates the major components:

Upper and lower moulded casings A

Fire button B

[illegible] over the end of the joystick shaft. C



Microswitches: Speak for themselves really. There's a switch for each direction, and diagonals are activated when two switches are pressed at the same time. With the Sureshot, the springs in the switches themselves return the stick to "neutral". Other makers use springs or rubber bushes. D

The handle: Some makers (like Dynamics) run a steel shaft down the centre for strength. The stick pivots about an inch from the end where it passes through the upper case, and the internal end of the shaft then presses against the microswitches inside via the plastic actuator. E

Wiring loom: Spaghetti-like jumble of wires that actually makes sense when you know what you're doing. F

the only one that's copied, even the name. Nobody copies any other joysticks. We think it's a nuisance, but in a way it's also a compliment.

Amstrad Action: "OK, that's all very well. But what we really want to know is, when it comes down to it, does it cut the mustard? Is it actually any good?"

Dynamics: "Yes. We've find out by talking to customers – I'm not talking about distributors, I'm talking about the end user. I like talking to them because they're my source of a lot of information and they tell you the honest truth.

"Of course, it's down to individual tastes in a lot of ways. Some people would swear by the Competition Pro – and some people don't like it because it's not a modern design. They can't actually critisise it for its application or its functions, they simplydon't like the look of it.



● Fitting the wiring loom to the microswitches.

They think it's too old fashioned. For example, it doesn't look 'macho' like these F-16 jet fighter sticks, and it doesn't have a top switch. Basically, the reason why we don't have a firing button on the top is very very simple. It really reduces the durability of the handle. The handle ceases to have a steel shaft. It has to be made out of two pieces of plastic that are screwed together and you lose a lot of the strength of a steel shaft.

"But then the development people always look at ways of improving the product. I have the joystick in residence with schools and I've given them those joysticks and said: 'Look, play with it – a demolition test – and just tell me what you feel about it. What would you like to see improved?' From their suggestions we've often made improvements.

"We improved the button, for example – made it even better than before so it's more responsive.

Amstrad Action: "But your joystick still looks that same as it did years ago."

Dynamics: "The actual basic design of the joystick goes back seven or eight years. Where we make improvements is on the inside."

Amstrad Action: "The sticks themselves are

STICKS IN THE MUD?

These old-fashioned, fuddy-duddy, Dynamics sticks are all very well but, it has to be said, do look a tad unexciting. At least they do compared to the the hi-tech aircraft-style joysticks that sprout more buttons than mission control and handles straight out of an Anne Summers catalogue...

Spectravideo has been making this kind of stick for ages. Infamous for the Quickshot joystick (*"Less feel than a suet pudding"* – *Rene Arnoux*), its latest range is the Quickjoy series...

The prices – and quality – of the joysticks vary quite considerably. At the bottom end of the range the joysticks don't have microswitches and consequently feel unresponsive. Meanwhile, the top end of the range, depending on your outloook, is either outrageously gimmicky or the sexiest thing since James Bond watches.

One bonus that Spectravideo's auto-fire joysticks have is a CPC switch. Autofire doesn't work on the CPC, and can cause spurious inputs instead. The switch completely disables the auto-fire circuit, and your CPC can run along happily again, without getting all confused.

Most of the Quickjoy range are table-mounted. That is, they attach to a flat surface with suction pads. That's the theory, anyway – The *AA* teak-look veneer melamine-coated chipboard desks (MFI sale – £29.95 the lot) just couldn't get to grips with them.

● Quickjoy Junior (1)
The cheapest of the lot. Uses metal contacts rather than microswitches and therefore feels rather 'dead'. Only for gamesters with the very tightest of budgets.

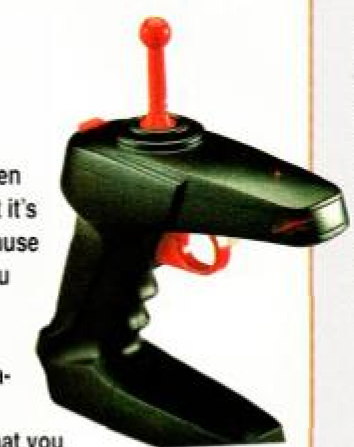
● Quickjoy Junior-Stick (2)
A departure from Spectravideo's usual design style. Instead of a gun-like handle, the bottom is held with the control lever on the top. Devoid again of microswitches, and the physical size of the unit makes it only suitable for those with very small hands indeed!

● Quickjoy II Turbo (3)
Fully microswitched joystick. Nice straightforward design (compared to the others).

● Quickjoy VI Jet-Fighter (4)
The best of the bunch. The most comfortable to get to grips with. Has more 'give' than the other joysticks – essential for the more hair-raising games. Has a huge base to allow for violent leverage.

● Quickjoy V Superboard (5)
A completely OTT joystick! Has six fire buttons in total, plus a bewildering array of switches, the majority of which don't seem to serve any obvious purpose. It has a built in LCD stop-watch – presumeably to time alien wave patterns and the like. A bit silly, really.

● Quickjoy IR



We haven't actually seen this one ourselves, but it's worth mentioning because its rather unusual – you don't connect it to the computer!

That's done by infa-red remote control. Spectravideo claims that you can play games from up to 30 feet away. The big advantage is of course that you don't have wires trailing all over the place (except for the one that connects the infa-red receiver to the CPC...)

This hi-tec technology doesn't come cheap, however, and you'll have to dig deep before you can become the proud owner.





IBM PC	£24.99
ATARI ST	£19.99
AMIGA	£19.99
CBM 64	£9.99 (CASS)
	£14.99 (DISC)
SPECTRUM	£9.99 (CASS)
	£14.99 (DISC)
AMSTRAD	£9.99 (CASS)
	£14.99 (DISC)

still a bit stiff at first, though, don't you think?"

Dynamics: "The reason we went for the rubber, purely and simply is that it had a longer life than a spring. Rubber always goes back to its original shape. It gives, but always returns. That's why we went for it. OK it's stiff at first, but it'll always be there. With a spring-loaded handle, it breaks, or there's too much give eventually."

Amstrad Action: "So are you ever going to do anything new? [At last we could reveal our secret weapon. You see, we had Inside Information] Is there some kind of new, Top Secret design that you can't tell us about?"

Dynamics: "Something totally different. We're going to make it out of new materials, and it'll be a universal joystick. We're pretty advanced on the circuitry. There's a lot of top secret features in it which – no, I can't tell you about them. They'll knock you out."

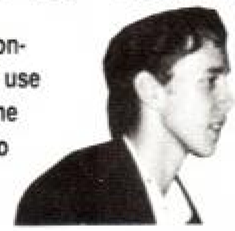
Amstrad Action: "It'll work on the CPC?"

Dynamics: "It'll work on anything. It will be a complete breakthough in joysticks. We're not sitting back and saying 'Oh well, the Competition Pro is doing well' and leaving it at that. We're improving it, revitalising it, making exciting all the time, fun to use. *And*, we're also looking very seriously at the next generation. Details at the moment are top secret. It's a breakthrough in joysticks, I can tell you that. It's the ultimate."

The ultimate joystick indeed? The world (and *AA*) holds its breath...

THE EXPERTS' CHOICE

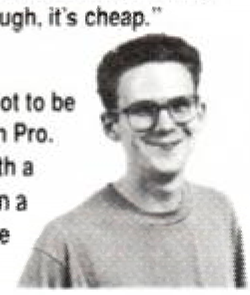
We wanted to know what joystick the professionals use. And who better to ask than those who use them every day? We had a quick poll around the magazines at Future Publishing to find out who liked what, and why.



- Mark Higham (Games Editor, *ST Format*): "I like the Konix Navigator. It fits very nicely in the hand. Despite the countless others I've tried, the Navigator's still the one for me."



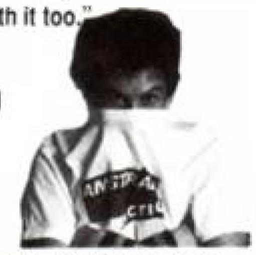
- Rod Lawton: "The Sonmax Sureshot's my favourite. I like the simple uncomplicated design. It has a nice light handle. Most importantly, though, it's cheap."



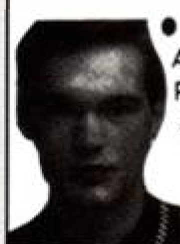
- Adam Waring: "It's got to be the Dynamics Competition Pro. Apart from a brief fling with a cheapy which broke within a month, it's the joystick I've been using for years."



- Trenton Webb: "I like the Powerplay Cruiser. It's great for killing and maiming and shooting and blasting. You can hit people with it too."



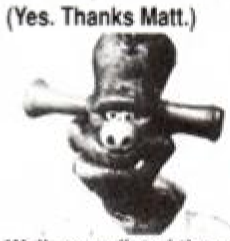
- Ollie Alderton: "The one I played *Kick Off* with's the best." (That's the Cruiser, Ollie.)



- Jason Holborn (Technical Editor, *Amiga Format*): "The Competition Pro's the best as far as I'm concerned. It's comfortable, reliable, and has a high resolution – which you need in when things start to get a bit hairy." (You can tell he's a Tech Ed, can't you...)



- Matt Beilby (Editor, *Your Sinclair*): "Blimey! Well my favorite's the Cheetah 125+, it's a great all round joystick. Oh, and the Konix Navigator's my favourite as well, it's really comfortable. My other favorite is the Cruiser – it's ace, you can stick it to the desk or hold it in your hand. On the other hand my favourite is the Competition Pro, it's really sturdy. Hurrah!" (Yes. Thanks Matt.)



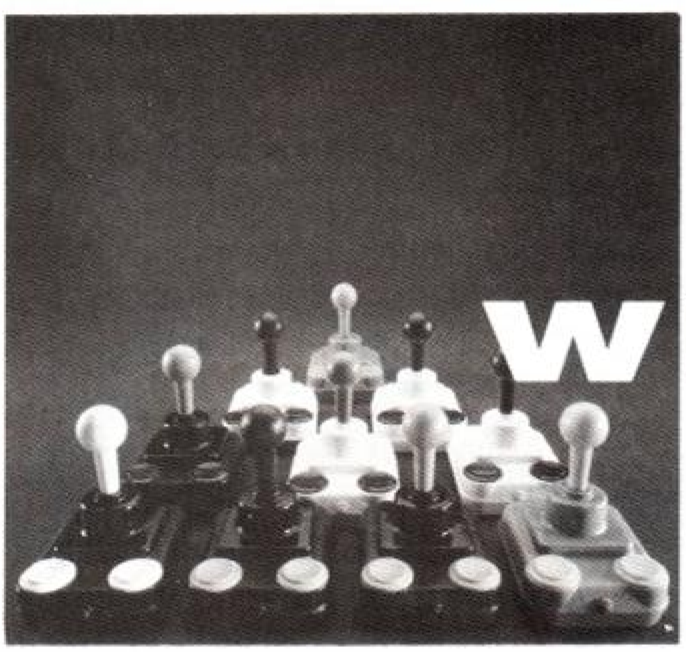
- Colin Cambell (News Editor, New Computer Express): "I like the Cruiser."

Well, we collated the results, processed them, counted them, lost them and found them again to reveal Future's Favourite joystick. As is traditional, we bring you the results in reverse order:

Equal Fourth Place:	Sureshot	1 Vote
	Cheetah 125	1 Vote
Third Place:	Navigator	2 Votes
Second Place:	Competition Pro	3 Votes
THE WINNER:	Cruiser	4 Votes

So there you have it. A close-run thing, but the winner is...

The Powerplay Cruiser!



WIN A JOYSTICK

To celebrate the World Cup, Joystick maker Dynamics is giving away 25 of its Pro Competition Joysticks. And that's not all! Dynamics is producing a special range of joysticks to represent each team. It's true – you'll be able to buy a Competition Pro in whatever team colours you want, be they the green and yellow of Brazil (boo!), the red black and white of the USA (don't make me larf!) or the wonderfully understated yet sublimely tasteful red and white of England (hooray!).

In fact, there are ten different strips to choose from, and they are as follows:

England (red and white)
Spain (red and yellow)
Brazil (green and yellow)
Belgium (red, black and yellow)
Italy (red, white and green)
Scotland (black and white)
West Germany (red, black and yellow)
Sweden (blue and yellow)
Holland (red, white and blue)
USA (red, black and white)

Now then, we just want you to answer one simply, itsy bitsy little questionette in order to qualify for one of these utterly magnificent joysticks.

Who's going to win the World Cup?

Answers, as usual, on postcards please. The competition itself starts on the 8th of June, so that's our absolutely final closing date for entries (we're not stupid). Simply jot down your name and address, the team you pick to win, and the team colours you want your joystick to be in, and send your postcard off too:

THE AA WORLD CUP COMPETITION
BEAUFORD COURT
30 MONMOUTH STREET
BATH
AVON BA1 2AP

The first 25 correct entries out of the postbag will secure their owners a wizzo Competition Pro joystick in their selected colours.

Blockbuster!

Before you make your first million as a games programmer, there is that small matter of several hundred hours spent slogging over a hot keyboard. ADAM WARING tells you exactly what you're letting yourself in for and what you're going to need (apart from aspirins)...

Nobody said that writing a megagame was going to be easy. In fact, it's just the opposite. Writing a game is damned difficult! It takes a lot of time, effort and determination. You'll need to have a lot of self-motivation and to be prepared for some pretty hard work if you're to suceed.

If you followed last month's instalment then you should by now have your basic game idea, and have worked out some of the finer details. Preparation isn't everything, however, and now's the time to take the idea off the paper and transform it into the game code.

A trip to the library

Sitting down at the keyboard for the first time, it's a case of "Where do I start?". And with programming, it's not at the beginning. Programs sort of evolve. They tend to be written backwards, with the lowest level routines completed first. It's best to start on basic routines. Not BASIC basic, elementary basic. Something like text printing is a safe bet.

These general-purpose routines are extremely useful to start what's known in the programming world as a library. A library consists of a collection of routines that aren't specific to any particular program. Once they have been written they can be used again and again in subsequent programs.

Sell the telly!

Writing from home can be very difficult indeed. Especially if you're doing it full time. You need to discipline yourself, or you won't get anything done at all! It's all too easy to get sidetracked into watching *Neighbours* instead of doing what you're supposed to be doing. The reason for this is simple. Programming is hard work. What we tend to do when faced with hard work is anything bar the task in hand. That's human nature, I'm afraid.

When the programming is getting along fine then it's not such a problem. If things are running along like clockwork, and everything.

TOOLS OF THE TRADE

Virtually all commercial games are written in machine code. Anything else simply isn't fast enough.

Machine code is the language of the processor. In simple terms, the program you write is a series of binary numbers that the CPU reads and acts upon. Each different number is coded to instruct the processor carry out a simple operation, such as adding two numbers together.

You *could* poke these operation codes directly into memory. However, developing a game this way would mean remembering what each and every op code does. Considering that these can be up to four bytes in length, it becomes clear that this would be a tiresome and inefficient way to proceed.

There is an easier way. An assembler allows you to call each of these op codes by a name, or mnemonic (don't even try to pronounce it!). It even allows you name specific addresses. This greatly simplifies the writing of code. Instructions like JP LABEL are far clearer than &C3465D. Both examples make the program jump to address &5D46.

6128 owners have an assembler in their collection already. It's on the CP/M disks that come bundled with the machine. Don't expect to be able to use it to write a game, though, since it is an extremely limited little number. It's not even a Z80 assembler! Instead, it is 8080, an older relative of the Zilog chip. Although it uses a limited number of the same codes, the mnemonics are totally different. On the whole, it's not worth bothering with.

If you have a 464 and rely on tape, then you should seriously consider getting hold of a disk drive. Believe it – developing a game on tape is a real nightmare. You need to save your code after every single change. On disk this is reasonably quick. On tape – forget it!

A few years ago, you'd be spoilt for choice as to which assembler to use. Now, sadly, things are very different. There are really only two choices now – *Devpac* from Hisoft, or *Maxam* from Arnor. Both have their supporters, and it really is down to individual taste which you go for – they are both first-class products.

Hisoft's *Devpac80* runs under CP/M. It consists of an Assembler and Monitor (a machine-code utility which lets you examine memory/code to see what's going on). With it being CP/M-based it can be used it on the PCW too. It's yours for £49.95.

Arnor's *Maxam* comes in many guises. It is available on tape, disk or ROM, and in several versions. There's the original *Maxam*, *Maxam 1.5* (which has some enhancements but no text editor – you use *Protext* or something similar), and *Maxam II* which runs under CP/M. Prices depend on the version. Contact Arnor for details.

So that's what's available on the CPC. However, there is one more option...

The Professionals

PDS is undoubtably the best assembler available for programming 8-bit micros. As with everything, though, you pay for what you get. The *PDS Assembler* costs a whoping £500. This seems very expensive – yes, well, it is – but anyone who has used it will swear by it. There simply is no better way to write CPC code than with this system.

In addition to the £500 you also need a PC costing at least another £500 – and that's for a basic low spec model. How can a thousand pounds be justified when all the others cost less than £50? Perhaps an explaination is in order.

PDS stands for Programmers' Development Systems. The assembler is designed for professional games writers, and is used by most of the major software houses and development teams. It runs on a PC, and is linked to the target computer via a cable.

The target computer can be a CPC, a Spectrum or Commodore 64, amongst others. All the code, graphics, music etc is stored on the PC and can be assembled and downloaded in seconds. Additionally, because the system can be linked to any popular home computer, the code for one version can easily be transposed to work on another. Compare this to the hassle of continuously loading editors and source code, assembling, quitting the assembler, loading in graphics and data, running the code – and still having it crash after all that.

Spending over a grand on equipment is a tall order. However, most freelance programmers get hold of their *PDS* by getting it as part of a deal with a software house. The company buys you the equipment as part of the advance for writing a game. It is unlikely that a software publisher would invest in an unknown programmer, though, so you'll need to use a CPC based system to start you off!



you try works first time, then in all probability you won't stop to eat or sleep. It's when things go wrong that you get distracted. When, no matter what you do, you can't get your code to work. And when this happens, you know you've got a bug.

When the bugs bite

If you habitually program in BASIC, problems with your programs are relatively easy to sort out. It's a different kettle of fish altogether in machine code. BASIC will tell you what went wrong and why, whereas the slightest error in machine code is likely to make the machine lock up. And BASIC won't allow memory clashes – trying to put two things in the same place. Machine code will. Similarly, you won't find BASIC jumping into an area that it's not supposed to – unlike machine code.

In short, BASIC protects the user from all the nasty things that can happen. Assembly language doesn't.

There is an art to bug-hunting, which develops in time. You soon get to know the tell-tale signs, and the probably cause. The most important thing is not to ignore the bug. When one crops up, fix it straight away. Don't put it to one side and concentrate on something else. If you put it off then you're sure to forget what was going on. You'll have to get back to it eventually, and by then you won't have a clue what's going on.

WORKING TOGETHER

One of the best ways to beat those programming blues is through teamwo:k. Writing alongside a friend who is just as enthusiastic as you are is an excellent way to work. It accelerates the learning process by enormously. Discusing programming techniques with others is an excellent way to come up with new ideas. Two or more viewpoints on the same subject inject vital energy and could produce some innovative concepts.

You can keep an eye on each other, making sure that nobody gets too lazy. You don't even have too work on the same project (although that does obviously cut down the time a program takes to complete). Just having someone to talk to and help you out when the going gets tough is enough.

Keeping up to date

One of the main problems with working at home compared to an ordinary 9 to 5 job is that there is no-one there to check on when you're clocking in – or how many half days you take. For this reason you should always draw up – and work to – a schedule. Work out a timetable detailing when you expect to get things done. Try your level best to keep to it. If you start to lag behind, work overtime to get things up to date. On the other hand, when you find yourself well out in front, that's no excuse for a go-slow. Keep working hard – the work will catch up with you eventually.

Make no mistake - it's going to be a long hard slog. But with a bit of preparation, a bit of planning and a lot of perseverance you'll come through with flying colours.

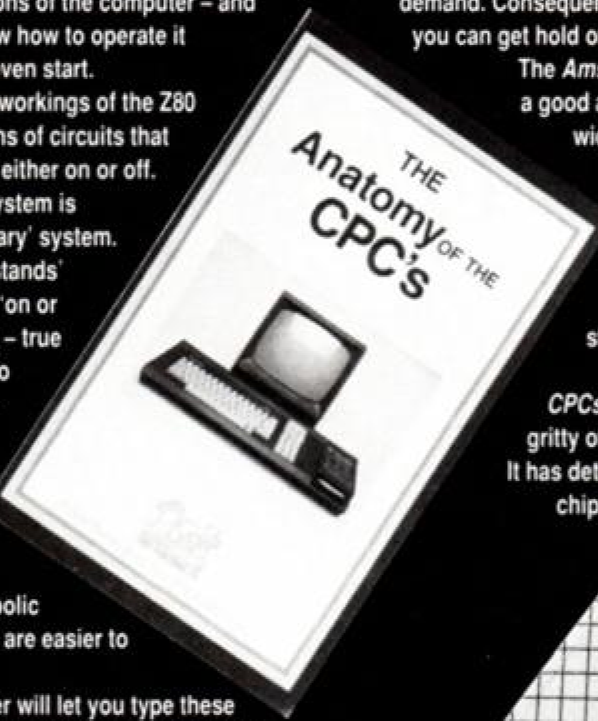


READ BEFORE YOU WRITE

Before you can even think of writing a game, there's one thing you need to do – learn how to program.

Inside the deepest recesses of the CPC is a Z80 microprosessor. It's this device that controls the operations of the computer – and you need to know how to operate it before you can even start.

The internal workings of the Z80 consist of millions of circuits that can be switched either on or off. This two-state system is known as a 'binary' system. The chip 'understands' only 'yes or no', 'on or off', instructions – true machine-code. To simplify the programming process for humans, assemblers represent these codes with symbolic instructions that are easier to remember.



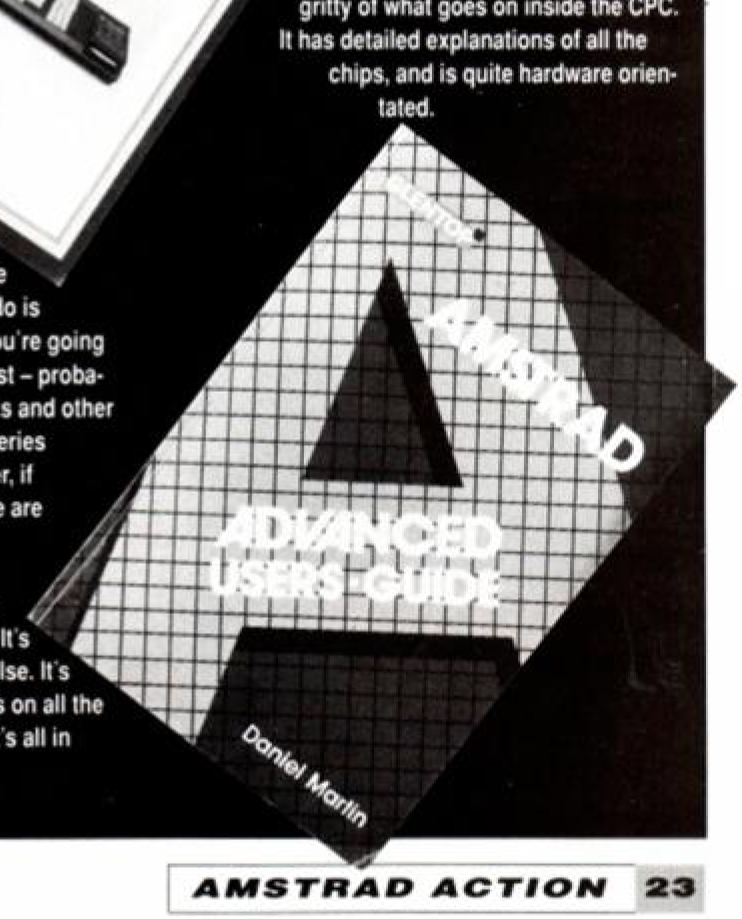
An assembler will let you type these instructions in, sure, but what it won't do is teach you how to use them. For that, you're going to need some learning material. The best – probably the only – way to learn is from books and other printed matter. Indeed, *AA* itself ran a series called *First Bytes* a while back. However, if you don't have those back issues, there are several good books out there.

Programming The Z80, by Rodnay Zaks, is essential. This book is considered to be the Z80 programmer's bible. It's more a reference guide than anything else. It's very comprehensive and has full details on all the instuctions. Timings, data and flags – it's all in here.

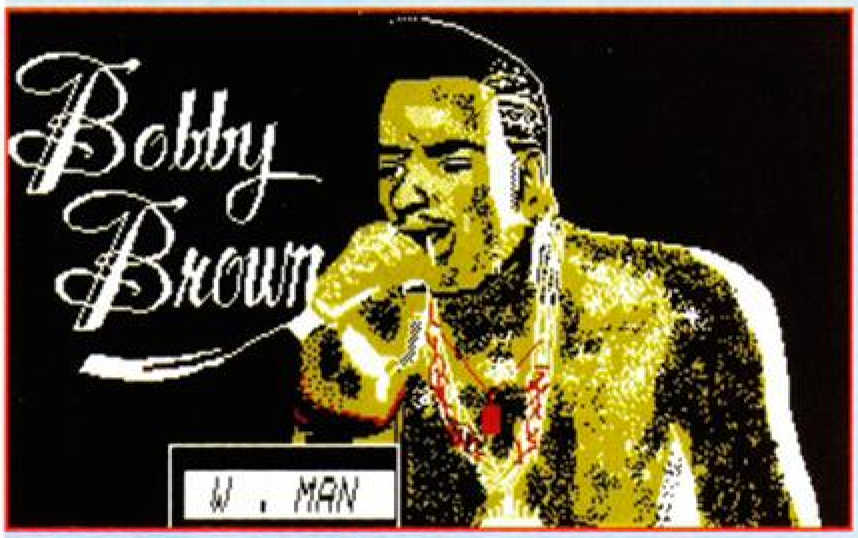
The *CPC Firmware Guide* is a scarce but desirable tome. It has lots and lots of specific information about the internal goings on inside the CPC. It went out of print a year or two back, and Amstrad hasn't republished it since – despite the popular demand. Consequently, these are like gold dust. If you can get hold of one, snap it up.

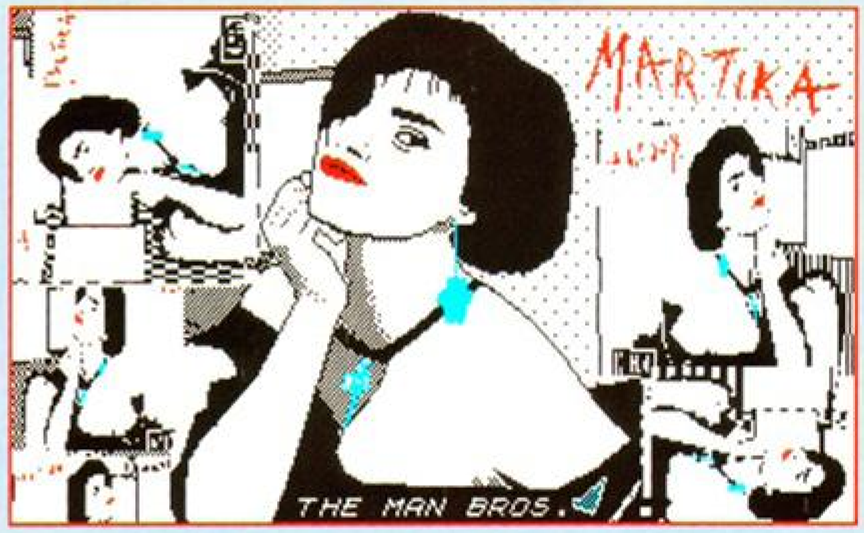
The *Amstrad Advanced Users Guide* is a good all-round book. It covers a wide spectrum, having sections on BASIC, ROM, and machine language. It's written by French author Daniel Martin, and suffers slightly in translation, but is still well worth having.

The Anatomy Of The CPCs gets down to the real nitty-gritty of what goes on inside the CPC. It has detailed explanations of all the chips, and is quite hardware orientated.









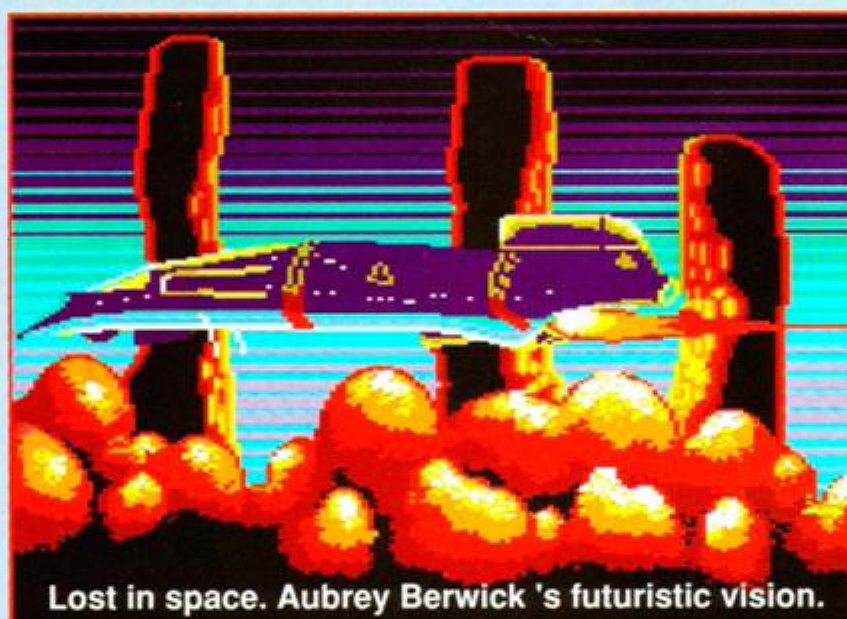
Pop pickers Wingchee and Kowchee Man bring you Bobby Brown and Martika.



This spectacular sunset is from pixel professor A Berwick, from Liss, Hants.



Here's Looking at ya! Another Berwick masterpiece.

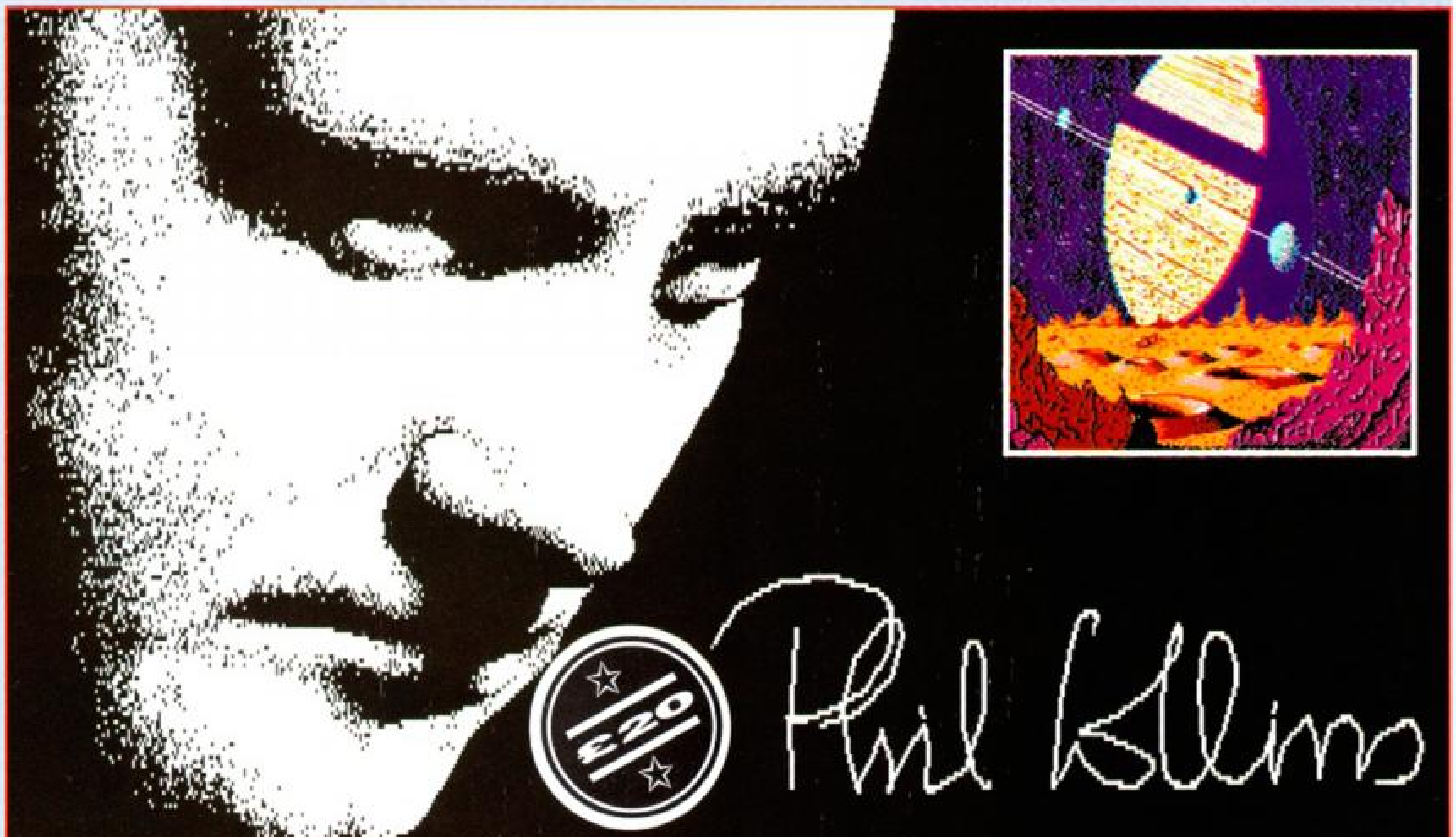


Lost in space. Aubrey Berwick 's futuristic vision.

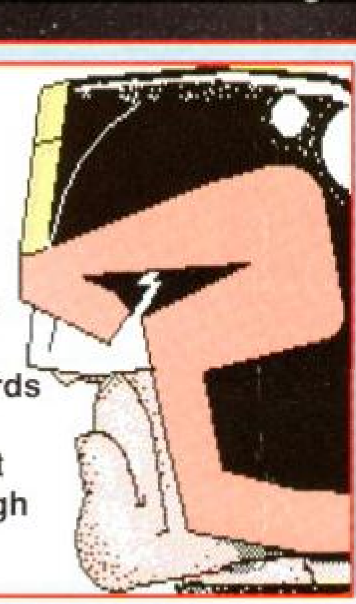




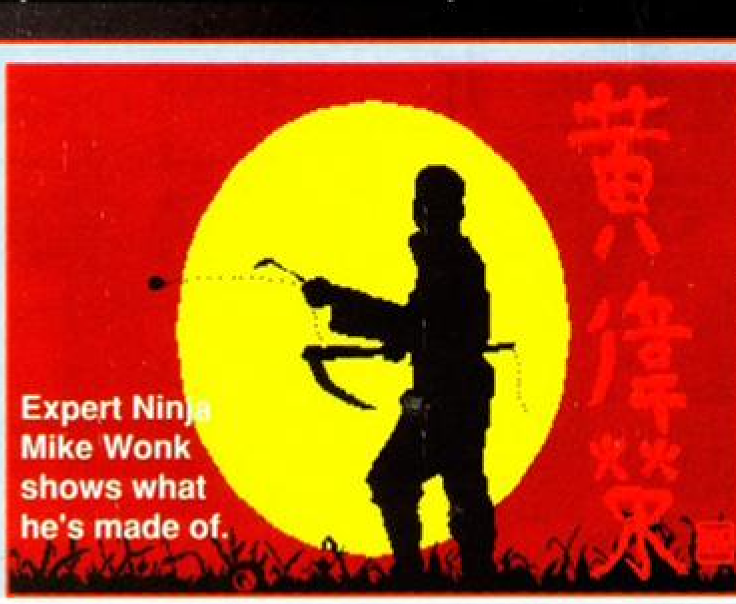
Out of this World! Yet another pair of pics from Aubrey Berwick



David Ware from Stubbington presents a mean and moody Phil Collins. His Saturn picture is inset.



"I am the law..." Martin Mc Canney, from Swords in Ireland dishes out some rough justice.



Expert Ninja Mike Wonk shows what he's made of.

● All you great CPC artists out there stand to win yourselves £20 *and* the eternal glory of having your pictures printed in *AA*.

So send those piccies in to the address below, together with some brief notes on the paint package and any special techniques you used - and don't forget to enclose an SAE if you want your disk back.

Adam Waring, AA Gallery
Future Publishing
Beauford Court
30 Monmouth Street
Bath Avon BA1 2AP

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PCW9512 Multistrike Films	2746MS	B
DMP2000/2160/3000/3160	2482	A
DMP 4000	2426	D
LQ3500	2741LL	C
Other (Please ask if yours isn't here!)		
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Brother M1009/1109/1209	2412	C
Commodore MPS-803	2412	C
Canon PW1080A	2223	C
Citizen 120D/180E/LSP-10	2488	B
Citizen MSP-20/40/50	2477	C
Citizen HQP-45	2478	E
Epson FX/MX/RX-80	2273	B
Epson LX/GX-80	2454	B
Epson LQ-500	2477	C
Epson EX-800	2774	C
Juki 6100 Daisywheel	2563MS	B
NEC Pinwriter P1/P2	2254	C
NEC Pinwriter P6+/P7+	2870	D
NEC P2200	2844	C
Panasonic KX-P1081	2228	C
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FORUM

Amstrad Action's Agony Uncle Adam Waring sifts through another crop of probs

• Free for all

Here's a tip for people with *Discovery Plus*. Included on the disk is a hidden file, X-BASIC. It's a program originally produced by Cresent Software and then bought by Siren, who used to sell it on its own.

To load it, type:

```
MEMORY &7FFF
LOAD "X-BASIC",&8000
```

X-BASIC provides over 70 new commands, some very useful, some less so. Among the more useful are |SCROLL.UP, |SCROLL.DOWN, |SCROLL.LEFT and |SCROLL.RIGHT, which scroll the whole screen in the specified direction. Pixel precision scrolls are provided by |LINE.LEFT and |LINE.RIGHT. |BIG prints double-sized text. |SLOW and |FAST are used to slow down and restore the speed of a BASIC program's execution, making it easier to debug. |DEEK and |DOKE are 16-bit versions of PEEK and POKE. |TIME.0 resets the clock to zero.

Commands are available to simulate the extra BASIC commands of BASIC 1.1 ROM on a 464, useful now that 1.1 ROMs are not being sold any more.

Adrian Pay
Patrixbourne
Kent

Thank you, Adrian. Sounds really good – especially when it's free!

• Monitor mayhem

I have been considering upgrading to either an STE/FM or Amiga A500. I will still be keeping my CPC6128 and colour monitor. The problem is that I have no usable TV, so could I buy an MP3 Modulator and and use the ST/Amiga's TV output as the aerial, so I could use the ST/Amiga with my monitor?

I have come to the conclusion that *Mercenary* on the *Command Performance* tape does not copy to disk with the Multiface II+. Why is this? It seems to transfer, but crashes when ran.

Also, why hasn't my *Hard Drivin'* on tape got sound? You gave it a sonix rating of 62%. Before you ask, yes, my sound chip does work.

Am I the only one, or are there really that many bugs in *Laser Squad*? When someone kills himself on opportunity fire, i.e. blasts an alien right next to him with a rocket launcher, the opportunity fire no longer functions for the rest of the game. Also, the baddies can hide out of sight even after using all their action points to shoot your men. Despite these grumbles, it's an excellent game.

Why is the new CPC a good thing? Personally, I think CPC owners are just going to be forgotten about as everyone rushes to buy the new machine and games will be made for it instead.

J Chan
Studley
Warickshire

You've certainly got a lot of things off your chest, haven't you?

Yes, you could buy a modulator, plug your ST/Amiga into that, and have a really bad, fuzzy picture. You'd be much better off, however, plugging the monitor into the computer directly. It will give a far superior picture. A lead can be made up quite easily, but to save you the hassle you can order ready-made leads from **Lightwave, PO Box 23, Wallasey, Mersyside L44 1EW**.

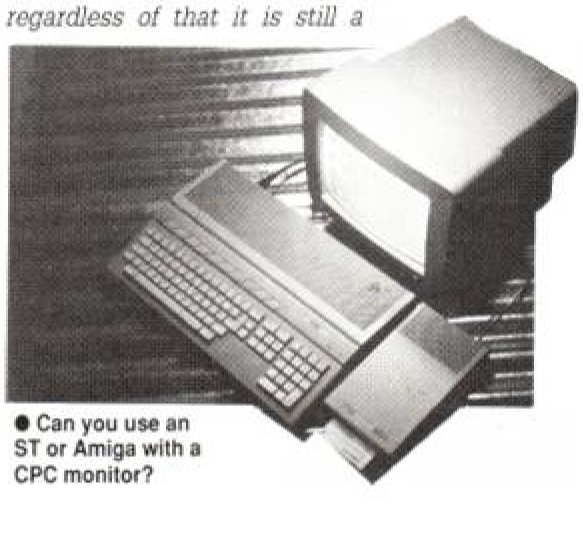
The ST lead has an order code of MVDU-74 and the Amiga MVDU-161. Both leads cost £10.95 including VAT, but you'll need to add a pound for postage and packing.

A word of warning, though: The CPC monitor isn't capable of displaying all the Amiga's colours, but it's a darn sight better than using a TV signal.

The Multiface, wonderful device that it is, cannot copy everything. Whilst it is an extremely useful piece of kit and has many legitimate uses, software houses are concerned about it being used for piracy. For this reason, some games detect the presence of a Multiface, and will not work with it.

Your copy of Hard Drivin' *doesn't have sound because it's the tape version. It appears that there is sound only on the disk version, which is what we based the review on.*

Laser Squad *has more bugs than you can shake a stick at, but regardless of that it is still a wonderful game. For your first point, perhaps shooting at point blank range with a rocket launcher is not a good idea, and should be avoided. However, regarding your second, I think the aliens have a built-in strategy to leave enough action points to hide after firing. I find a good way to deal with them is to bung a grenade to where they shot you from. Very good for taking out baddies around corners.*



• Can you use an ST or Amiga with a CPC monitor?

• You DIP-switch!

Two correspondents in recent months have asked for advice about printers which were apparently not working properly. I Looker of Dorset had a problem with a LX-800 (AA51), and Inge Bolofte from Frederikssund, Denmark with an Amstrad LQ500di

I have an Amstrad LQ3500di, and it wouldn't work properly after I set the electronic memory switches to the values shown on page 21 of the manual. After further study of the manual and some experimentation, I found that switch S8, SLCT IN, Should have been set to 0 (Not sent) and not 1 (sent) as shown in the manual.

It may be that Inge changed some of the other DIP switches when she changed from the Danish to English character set. She says she cannot remember the correct configuration for the switches. It is always a good idea to check the printer manual, and since the LQ5000di is probably similar to the LQ3500di, to double check that S8=0, not 1.

If she uses the Danish character set most of the time, she can make a tempory change to the English set quite easily by using ESC "R" (3) as a printer control code in the file to be printed, without touching the DIP switches. She should consult both her printer and word processor manuals if she is not familiar with the use of ESC codes.

I have no experience of the Epson LX-800, but Mr Looker should also check the DIP switches, as well as making sure that the cable is plugged in the right way and is not damaged, as you suggest.

F H Elsby
Cairo
Egypt

Part of Inge's problem was that she didn't have a printer manual. Thanks for the

The new CPC console is a good thing because software written for the CPC should work on it as well. It stands to reason, therefore, that developers will take a renewed interest on the CPC as the market will grow to cater for all the machines.

● More memory than you know what to do with

A short time ago, I gave my daughter a Dk'tronics RAM pack for the Amstrad 6128. I am delighted to hear that you have sucessfully used one. How do you do it?

The literature I have with mine refers only to tapes, and has no reference to disks, and try as we will, we can never get anything to function.

Last year, a friend of mine who is one of the top computer scientists in Bendix, and helped put a man on the moon, was able to spare me half an hour or so, and tried to make it function. He had no more success than I did because he kept getting "Disc Full" on his screen.

The problem is that the instructions sent out are certainly unintelligible to a layman like myself, and an expert American programmer can't understand the English either.

You will realise that my daughter and I are tyros in the world of computers. I had rather expected, when I plugged in the device into the expansion on the Amstrad 6128, to have a bigger memory or another solid drive like the M drive.

I wonder if you can help?

F Workman
Las Palmas
Spain

Oh dear. I'm sorry to have to tell you that no amount of computer experts are going to help you to get this device to work. You see, the DK 'tronics 64K RAM-pack is designed to work on the CPC464 only, and no amount of jiggery pokery will do any good. Return it from whence it came.

I thought Bendix made washing machines. Must of been a particularly powerful one to take someone to the moon – mine can just about manage to make it across the kitchen floor...



● The Dk'Tronics 64K RAM-pack works on the 464 only.

Not the type

Type-Writer, which you keep referring to, and which is printed yet again in *Type-Ins*, on page 63 of the April issue (*AA55*) of *Amstrad Action* could be a very useful program. However, in the same *Type-Ins* section of the magazine is a typical example of where it falls down at present. I have typed in the colour version of the *Towers of Hanoi* program, and on running it something is wrong. But *Type-Writer* requires the line to be typed exactly as printed, and in this case *Hanoi* is full of redundant LETs GOTOs and NEXT Xs, which are a waste of time to type in. Somewhere in my listing is a typing error which *Type-Writer* is of no help in finding.

Could you not please publish the routine which calculates the *Type-Writer* symbols so that it is possible to determine the correct code for what the line as amended should be.

Or have I fallen for an APRIL FOOL joke?

Micheal Bland
Caversham
Reading

You say that typing in all the listing in longhand (i.e. with LETs and GOTOs) is a waste of time. It strikes me that you've wasted a lot more time by not typing them in. Why not type in the listings as published? It won't take more than an extra five minutes.

I am not going to go through every listing we print tailoring it for your needs. Neither am I going to publish the source for *Type-Writer*. Believe me – it would be a lot more hassle than just typing in the listings properly.

I believe that *Type-Writer* is an extremely friendly system, and in conjunction with the hard spaces (dots) that now appear in *Type-Ins*, we have a foolproof method.

Well, almost foolproof...

● An interest in LOGO

Recently, I have got interested in the computer language LOGO. I read in *AA*39 (December '88) that LOGO was available as a disk version, but you gave no mention of a tape version. I would be more than grateful if you could help me. Also, is it possible to transfer the disk version to tape?

David Murry
Newry
N Ireland

Owners of the 6128 get LOGO free as a program on the CPM disk. This runs under the CP/M enviroment, which means, unfortunately, that you won't be able to transfer it to tape. I am not aware of any LOGO packages on tape, but if anyone knows different, enlighten me...

● On the right wavelength

I was wondering if you know of anybody that sells a CW & RTTY decoder that that you can plug into a shortwave single-side-band reciever and a CPC464, because I don't know of anybody that does.

Andrew Snook
18 Hawkesbury Road
Fishponds
Bristol BS16 2AP

You what? I have printed your full name and address just in case anyone has the faintest idea of what you're talking about.

● Bad driver

Please could you help me. I have an Amstrad LQ3500 printer, and AMX *Stop Press*. But when I try to print out a page, screen or cut-out it prints about two inches too long. I have tested printing out with a printer from a friend (an Epson LX800) and it was printed out properly. So my only conclusion is that the printer's at fault. Please, if possible, can you help me?

J Tucker
Flitwick
Beds

Sounds to me that you're using the wrong printer driver. Most software is configured as standard to work with Epson-compatible printers (which explains it working on your friend's). You will need to use the right printer driver. Consult both the Stop Press *and LQ3500 manuals.*



● What's wrong with *AA*?Mike Wheeler tells it how (he thinks) it is...

● Strong signals

I have an Amstrad CPC464 and really know very little about computers. I bought it just to play games with. When it was under guarantee I had quite a lot of trouble loading games, but got an engineer to adjust the tape head, and after that it seemed OK. Until now, that is. I am finding that very few of the cassettes I own will now play, even though they have previously. They have hardly been used, so they are not worn out. The computer itself seems to make rather a muffled sound on trying to load these games. Please will you give me some advice as I am getting desperate.

Margaret
Colwyn Bay
Clwyd

Fear not Maggs, it's a problem that's fairly easy to rectify. It think that it is a re-ocurrence of the problem you had before – a misaligned tape head. The reason for the fault is that the

tape head must be at exactly 90 degrees to the tape to read the data properly. Sometimes they can stray slightly from this position. Fix it as follows:

Get hold of a watchmaker's screwdriver. Put a music tape into the 464 and set it to play with the volume on full. There is a tiny little hole just below the cassette door. Insert the screwdriver into this hole. It should (hopefully) connect with a screw on the tape head. Twiddle it around. You should hear the sound become clearer. Home in on the clearest signal. Your games should now load again!

● I just can't cheat

I am one very fustrated reader of your *Cheat Mode* section. You print Multiface pokes for such games as *Chase HQ* and *Operation Thunderbolt*. I own a Multiface II+, and when I try to load these games with the Multiface plugged in they crash. Please could you tell me what I'm doing wrong?

Chris Ingram
Grimsby
South Humberside

I can think of two possible reasons for the problem, Chris. Firstly, different versions of any given game may not reside at the same place in the computers memory. For instance, a disk version may well be located differently to the tape version, as could a re-release on budget or on a compilation.

The second possiblity is that the game is detecting the presence of the device. The Multiface II+ can be switched off with the toggle switch. Multiface II (not plus) doesn't have this switch, but can be disabled by firstly pressing the red button once, and then pressing 'R'. This effectively 'hides' the Multiface.

There is a third category of software which can detect the Multiface even when it's switched off! Obviously we don't print black box pokes for these – it's impossible!

● Fast BASIC

I, like many of your readers, make BASIC games. They work perfectly well, but could do with a touch of speed. I wondered if you could tell me where I could get my paws on a BASIC compiler. As I don't know any machine code (and don't intend to!) I would like my programs to be faster and protected. I would like to know how much it would cost as well. I have (yes, wait for it!) an expanded Amstrad CPC464 with (amongst other things) a ROMbox plus *Protext*, but no disk drive! – they're too expensive!

And while I think I lost you with the last question, here's another! Among your many advertistments, I saw the ROM chips *Utopia* and *BCPL*. What are they, and what do they do?

If you ever manage to answer that I would be most pleased! Oh, and one last thing: Where was *Naked Video* in issue 55! I was looking forward to scrolling the screen. Thank you for any sort of reply.

Nathan Hyder
Northolt
Middlesex

Well, Nathan, there is a tape-based BASIC compiler, but I'm not sure if it is still being published. Laser BASIC from Ocean was available on cassette. Check out your local software store for availability.

Utopia and BCPL both come from Arnor. The first is a suite of utilities. Extra commands are provided to do things like dump a screen to a printer, format and copy disks (oh, you don't have a disk drive, do you), and in general it just makes life a lot more pleasant. The second is a programming language – like BASIC but different. It's not really suitable for writing games though.

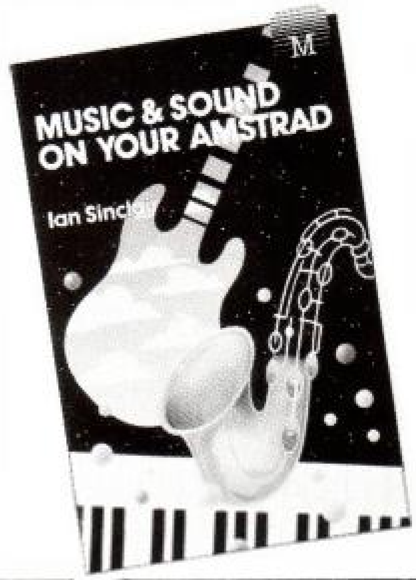
At a guess, I'd say it was in AA56.

● Music maestro

I own a 464 and have been searching through the manual about how to make your own music (chords, tunes etc) without success. Do you know where I could get a good book about it? Also I was wondering where I could get RAM cartridges so that games would not be multi-load?

Kevin Matharu
London

Music and Sound on Your Amstrad, *Published by Melbourne House, ISBN 0-86161-192-6, and written by Ian Sinclair, may be worth a look. I am not saying it is a particularly good book however – Mr Sinclair churned out hundreds of similar titles for several makes of computer. It isn't very advanced, but it should help you get to grips with the basics.*



● Going green

Thanks for telling us about the Dixons monitor sell off. I have now got a great colour monitor which has totally revitalised my CPC. My problem is now what to do with the old green monitor.

Luckily, I have someone who wants to buy it for use with their Amstrad PPC512. I have bought all the necessary connectors etc, and have tried – in vain – to connect the two sets of pins so that I can get an output from the computer on the screen.

Please could you tell me what pins I need to connect together. Here are the details of the PPC's video connector pins:

1 Ground
2 Secondary red
3 Primary red
4 Primary green
5 Primary blue
6 Secondary green
7 Secondary blue
8 Horizontal SYNC
9 Vertical SYNC

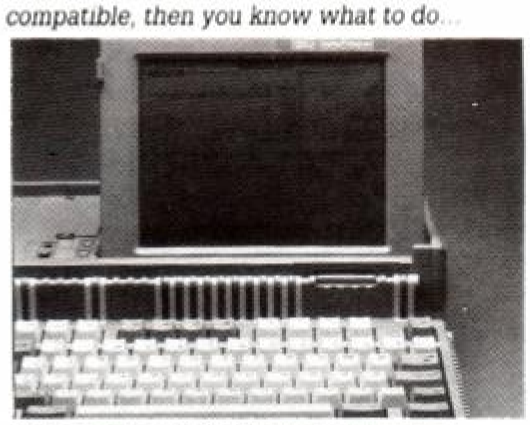
I would be grateful if you could sort this out for me.

Nicholas Gemesi
Gillingham
Kent

PCs are strange beasts. Even more so are PC monitors. The thing is that there doesn't seem to be any standard way to connect them together. The multitude of different types of display only serve to make the things worse. What with Mono, Hercules, CGA, EGA, VGA... all these 'standards' only add to the problem. I can't guarantee that you'll be able to get the monitor to work properly with the PPC. However, with a little experimentation together with just a dash of luck you might just get it to work. Try putting a couple of diodes in line with the horizontal and vertical SYNCs in order to connect to the monitor's single SYNC. Connect the two grounds together, and Primary colours to the RGB pins (you may find the display is extremely bright, in which case try putting some resistors in line). Leave the LUM pin on the monitor and the secondary colour pins from the PPC alone for the moment.

Hopefully, you should have some kind of picture by now. The question is what to with the secondry colours. It may be that they are only needed on certain types of monitor, in which case Bob's your Mother's brother. Try linking them all to the LUM pin, again with diodes.

If anyone has already got their CPC monitor linked to a PPC, or indeed any other PC-compatible, then you know what to do...



● Connecting your CPC's green screen to an Amstrad PPC portable *should* be possible. Probably.

CRACKING THE CODE

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Spring surprise!

The European Computer Trade Show, the industry's annual April showcase, started on the 1st – but it was no joke. TRENTON WEBB was there...

With the new CPC still dominating matters Amstrad, many expected the European Computer Trade Show (ECTS) to be quiet on the Z80 front. They couldn't have been more wrong. Literally piles of games were being previewed, while the launch of two new labels added to the buzz of excitement around the Business Design Centre.

The Sales Curve – which has previously brought us such stunners as *Silkworm*, *Continental Circus*, *Gemini Wing* and *Ninja Warriors* on behalf of Virgin – has made the break. The label (as yet un-named) should debut this September with *St Dragon* and *SWIV*. St Dragon, a Jaleco coin-op licence, is a sideways scroller, while *SWIV* (working title) features a jeep and helicopter in a mad destructive charge up-screen.

The latter game sounds a little like *Silkworm*, but with the action being viewed from above this time: the jeep will have a free run of the screen too.

As well as getting the new label together, the Sales Curve team has been busy running around finding great new arcade licences.

The oddest of its new batch of coin ops is *Rod Land* (currently testing in the UK under the title *T and J*). A cutesy game, it has one of those sickly sweet plots that make brilliant games. It concerns pink and blue fairies armed with magic wands and ladders on the hunt for pretty little flowers!

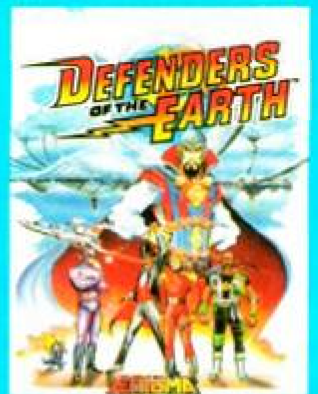
If the team can keep up to those excellent *Continental Circus* levels, the future looks bright indeed for the label – whatever it's eventually called!

Other new kid on the block is Hi-Tech. This budget house has managed to score a whole ark-ful of Hanna Barbera cartoon licences. *Yogi Bear* and *Hong Kong Phooey* are first on the list, followed by *Ruff and Reddy* (*please God, no! – ed*) and *Atom Ant*. Proof positive that the budget licence market is really taking off.

To back this up Hi-Tech has got hold of some classic oldies, like *Spy vs Spy* and *Guardian II – Revenge of the Mutants* (*Defender* in drag) to give its new label a real market presence.

● Enigma Variations

EV has gone solo too. The team most recently famous (or infamous!) for *Gilbert* and *Escape from Drill* is now slaving away over its first independent release, *Defenders of the Earth*.



Based on the *Going Live* cartoon, it's a horizontal platform leap-about-and-bash-em-up. The game should have been finished now, but logistical problems prevented completion of the CPC version in time for the show. The company promises to have Lothar, Flash and co with us ASAP.

Its next project you could kick yourself for not thinking of first: *Wacky Races* – the cult TV show – should transfer brilliantly to the CPC with its cartoon look, car chases and peculiar brand of violent slapstick. It should corner the nostalgia market – Rod's been mumbling about some technical adjustments to Penelope Pitstop's tappets ever since he heard the news...

● US Gold

One event is set to dominate the world's TV and software this summer – the World Cup. After an embarrassing programming catastrophe last time round (don't worry Adam, your secret's safe with us!), US Gold is on the trail of footballing glory again, and so far *Italy 1990* looks really promising.

As well as all the normal formation selections and nasty refs, there's TV-style presentation to give an 'on-the-pitch' view of the



● *Dynasty Wars*: US Gold's Far Eastern romp

corners and place kicks. Most impressive of all, though, is the accuracy of the game's structure. It allows you to play through the tournament, meeting opponents from the same group in the correct order. Argentina,



● *Italy 1990* from US Gold. A Cup winner?

for example, will play Cameroon first, both in the finals and the game.

Other Gold products on display included the fearsome *E-Motion* and *Dynasty Wars*. *E-Motion* gets the treatment this ish. *Dynasty Wars*, on the other hand, is still in the production stage. Based in China circa 184AD, four horsemen must overthrow a band of rebellious warlords. With variable weapons, the aim is to survive eight apocalyptic levels that become progressively harder as you get more tooled up for the heavy-duty sword action.

Still no mention from US Gold of that elusive West Phaser though!

● Ocean

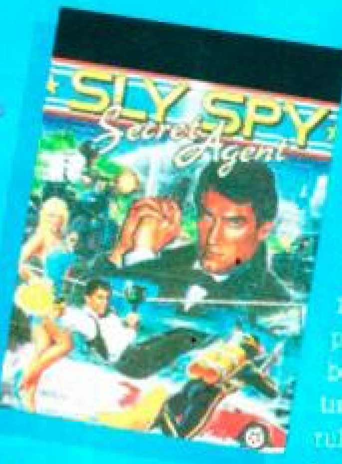
Quiet since the thundering success of *Rainbow Islands*, Ocean has tied up some more mean arcade licences.



First out of the bag will be *Shadow Warriors* which was the ninja coin-op of last year. A two-player fighting game, it allows manoeuvers never seen before in the long history of beat-em-ups. The two stars can swing around lamposts in Spiderman fashion, and even smash the scenery!

Hot on its heels, though, is *Sly Spy Secret Agent*. Another arcade title, it's an amalgamation of the greatest moments of spy movies. As with messrs Bond/Flint/Blaise and co, the action includes sky-diving, scuba-diving, car chases and battles inside all manner of enemy fortresses, making for nine levels of intense action. And of course there's a – wait for it – a soccer game (*that'll make a change! – ed*): *Adidas World Championship*

Football. Little's known about it yet, but inspired guesses shouldn't be far off!



● Microprose

Despite being reasonably CPC silent of late, Microprose was still grabbing the headlines. It's invested in a its own arcade machine, based on that old fave *F-15 Strike Eagle*! A strange title to hit the arcades, it's certainly impressive on the tech side. The most sophisticated arcade game to date had generated a mighty 12,000 2D polygons per second, while *F-15* will generate up to 60,000 3D polygons and re-generate itself at a rate of over 30 frames per second!

To find out what that actually means we'll have to wait until Autumn, when the coin-op hits the UK.

● Gremlin



This stand was dominated by just one person (thing) – *Monty Mole*. With only a matter of days to go before his big re-launch, Gremlin was hitting the hype hard. T-Shirts, badges, balloons and posters adorned every inch of the stand, while some poor soul stalked the hall dressed as the mole himself.

The high hopes seem justified as Core Design – designer of *Rick Dangerous* – has been given the task of turning the everyday mammal into Impossamole. Monty's new character. The poor little fur ball has apparently been nabbed by aliens, given super powers and has to save the world.

● Virgin

Quiet since Christmas, the people from Portobello Road are back! Promised (we've heard that one before) soon is *Double Dragon II*. It'll be accompanied by the offical launch of *Dan Dare III* (reviewed *AA*53). *Eagle*, Dan's comic book base, is to be re-launched and an exhibition in celebration of Square-Jaw's birthday should help push things along too.

● Linel

This Swiss company is all set to make a big hit with its forthcoming CPC special, *The Champ*. Based on the greatest sport in the world (*what about Ludo? – ed*) – boxing – it has some pretty impressive backing in the shape of the World Boxing Council! It claims to feature the original Rocky theme, 1,300 frames of animation and a two-player mode. In the box will be a book setting out the history and rules of the game as well a little set of key ring gloves. Seconds out!



● Domark

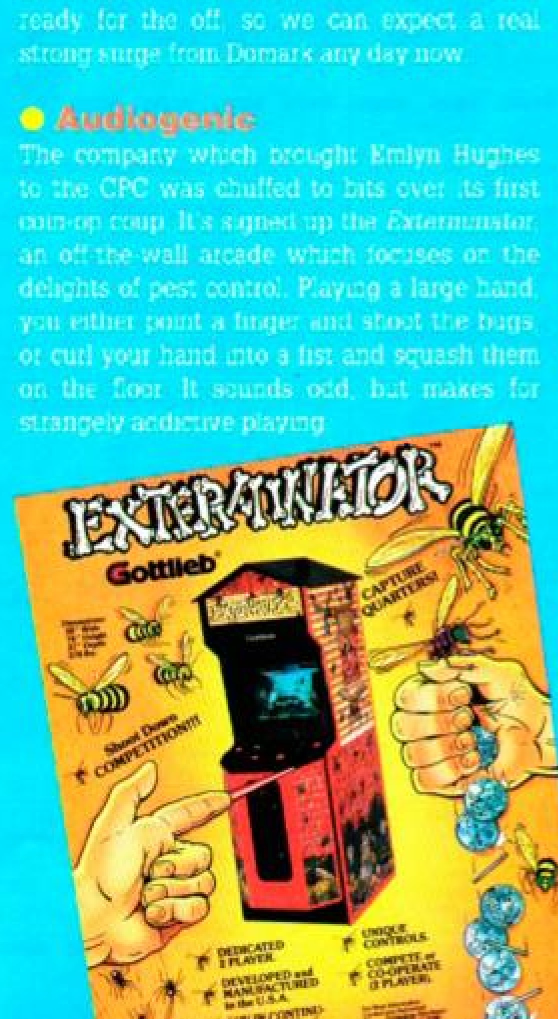
Is ready to storm the spring season with some monster games. *Escape from the Planet of the Robot Monsters*, to be more specific, a previously previewed B-movie spoof. *Cyberball*, the futuristic Yank football sim, is in the final stages of playtesting too, and should be ready to give soccer games a bashing this summer.



Most eagerly awaited though is *Klax*. Another of those games that stuns with simplicity and overwhelms with subtle gameplay. Rolling blocks of various colours are coming your way. You have to catch and stack them in neat little piles, trying to create diagonals and stripes – much like *Tetris*. It too is nearly ready for the off, so we can expect a real strong surge from Domark any day now.

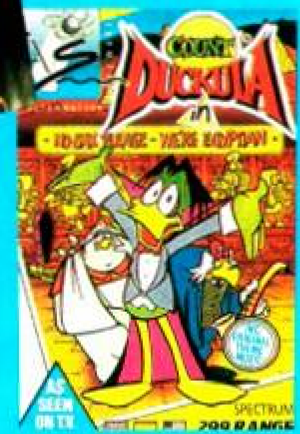
● Audiogenic

The company which brought Emlyn Hughes to the CPC was chuffed to bits over its first coin-op coup. It's signed up the *Exterminator*, an off-the-wall arcade which focuses on the delights of pest control. Playing a large hand, you either point a finger and shoot the bugs, or curl your hand into a fist and squash them on the floor. It sounds odd, but makes for strangely addictive playing.



● Again Again

The team which started the budget licence ball rolling in the first place is still at the forefront. To follow up recent hits like *Duckula* and *Sooty and Sweep*, Again Again has rounded up another bunch of





surefire favourites. *Popeye* will lead the way, followed by *The Wombles*, *Fireman Sam*, *SuperTed* and the re-launched *Bangers and Mash* (?).

Alternative (one of the company's many guises) was obviously reading *AA* a couple of months back, as it's launching a new range of educational software. The programs will be licenced, improving product awareness and selling power to the very young. Sooty and Sweep will be having *Fun With Numbers*, Thomas the Tank Engine *Fun With Words*, while Postman Pat is set to enjoy *Fun With Shapes and Sizes*.

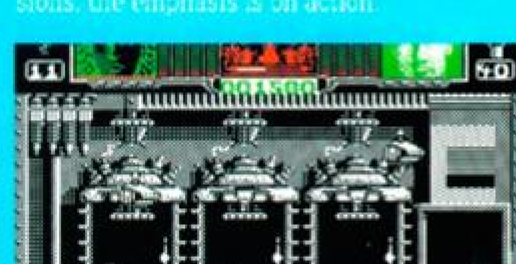
And proving its commitment to the software industry's image, Alternative will be launching (no pun intended) an RNLI charity game called *Storm Force*. This follows the success of *The Official Father Christmas*, which raised cash for the Save the Children Fund last winter.

● Accolade

While fiercely guarding its highly-coveted (and very tasty) Grand Prix posters, Accolade was busily chatting about its new prog *The Cycles*. Based on the high-octane world of motorcycle grand prix racing, everybody's hoping it follows in the footsteps of *Jack Nicklaus* and not *Test Drive II*.

● Activision

With *Fighter Bomber* on the CPC release horizon, Activision was also singing the praises of bundles of new product about to hit the software shelves. *Sonic Boom* (previewed last month), *Hot Rod*, *Hammerfist* and *Ninja Spirit* are the new stars. All arcade conversions, the emphasis is on action.



● *Hammerfist*: beating a path to the CPC soon.

CHEAT MODE BOOK OFFER

You've seen the covermount (*AA*56), you've read the blurb – now buy the book! *Cheat Mode II – The Revenge* is out, and available only from your friendly neighbourhood mail order department. Read on…

All you old timers out there *must* remember *Cheat Mode 1*, the collected hinting, tipping and poking wisdom of *Amstrad Action*'s first sixteen issues. This magnificent 92-page epic was snapped up in its thousands by eager *AA* readers looking for a way to take the sting out of their fave games…

Well you ain't seen nuthin' yet. *Cheat Mode II* takes the best cheats from the last *43* issues! The cream of the last three years of *Cheat Mode* has been crammed into 130 pages of absolutely essential info.

And as if that wasn't enough, we've gathered together *150* previously unpublished listings from such poking giants as Phil Howard, Mike Wong and Graham Smith.

Mind you, typing in all those listings is OK for practiced BASIC-bashers, but can be fraught with "Syntax Errors" and "Unexpected NEXTs" for the rest of us… which is why *Cheat Mode II* is also available with cassettes containing all those pokes!

So – how do you order this magnificent work? *Cheat Mode II* costs £9.99 on its own, and £11.99 with the two cassettes. Postage and packing in both cases in £1.45. All you have to do is fill in the order form below and send it off to the address printed – and you'll become the proud owner of the most important new work since… since… well, since *Amstrad Action* itself, dammit!

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Sounding off!

JAMES PINTO starts a new series on exploring the sound possibilities of your CPC's sound chip. Is your Amstrad a mini Fairlight beneath the skin? Read, and learn...

When people hear that you make music with your CPC, they usually laugh and tell you how wonderful their Amiga or Archimedes is at producing sounds. This may be so, but the CPC is still quite capable of creating quite complex and exciting sonic effects.

Although the Amstrad sound chip – the AY-3-8912 to its friends – only has three sound channels, which limits you to a maximum of three notes at a time, clever use of sound envelopes and space can often fool the listener into thinking that the CPC has more than three channels.

And fast successions of notes that fool the listener into thinking that more than three notes are being played simultaneously are also a good idea, and it's a technique that you can hear quite often in computer games such as *WEC Le Mans* and the musically brilliant *Agent X 2*.

What's that noise?

Although the CPC is quite capable of producing pleasant music, there is not really any advantage in going into great detail at the moment, because to get the best out of Arnold for this we need to resort to machine code. This is because interrupt-driven music (i.e. that which continues while the CPC is doing other tasks) is impossible to produce using BASIC. However, there will be some programming examples in BASIC.

The main task I use the sound capabilities of the CPC for is producing sound-effects in programs. The CPC can, with the right programming, produce some quite realistic sounds. This is what we'll cover first, and to do this we need to look at the various sound commands available on the CPC. These are covered in detail in the panel on the opposite page...

Channel status

For many people learning sound on the CPC, the principles of the channel status are the hardest thing to grasp. Indeed, the channel status parameter is definitely the most complex of all the sound commands, but for simple (and even not so simple) music and sound effects, the theory of bit significant values and binary does not need to be mastered. If you DO want to learn about bit settings and bit-significant values, you have two options:

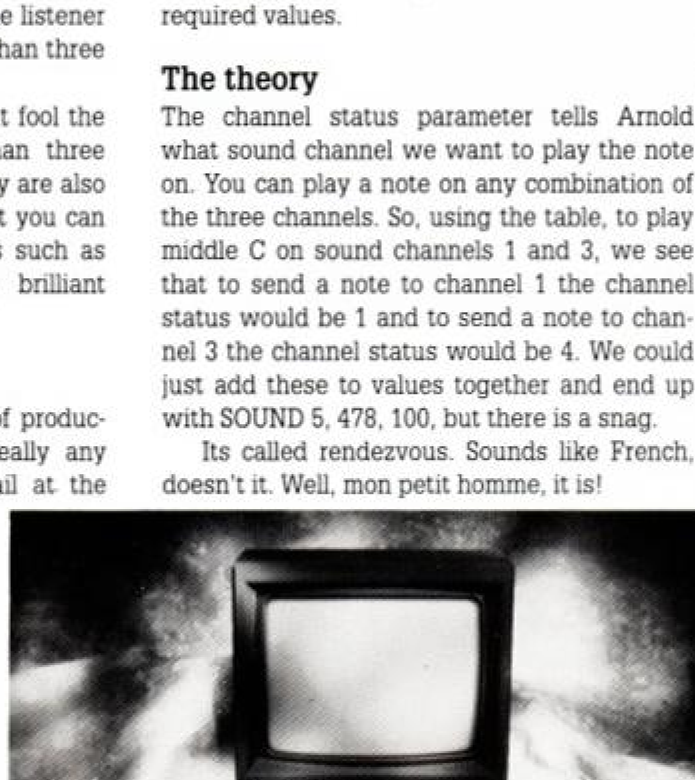
a) Do an A-level course in Computing Science
b) Read the appropriate page in your manual

If you can't be bothered to involve yourself with this, then use my table to work out the required values.

The theory

The channel status parameter tells Arnold what sound channel we want to play the note on. You can play a note on any combination of the three channels. So, using the table, to play middle C on sound channels 1 and 3, we see that to send a note to channel 1 the channel status would be 1 and to send a note to channel 3 the channel status would be 4. We could just add these to values together and end up with SOUND 5, 478, 100, but there is a snag.

Its called rendezvous. Sounds like French, doesn't it. Well, mon petit homme, it is!



● How do make music with no instruments? With the CPC's sound chip, of course...

The best way of describing rendezvous is by a cute little story I've thought up. Are you sitting comfortably? Then we'll begin...

Do you remember those cute little songs you used to sing at primary school, where someone starts singing and gradually each person joins in once the person before him or her has sung their bit? They were called 'rounds'. Well, kiddies, think of 'rendezvous' as the schoolteacher who keeps the children in time and makes sure anyone who sings out of time starts singing in time again. Think of the children as the three sound channels. If you just used 5 as the channel status (in the above example) and you had lots of notes, rather than one, being played on each channel, and you wanted the channels to stay in time with one another, you'd have a problem. Imagine in our story, that one of the three kids in our class is a bit of an idiot and gets of of time with the other three pupils. Well, this is what happens if you don't 'rendezvous' the required sound channels.

If you look at the table, you will see there



are three values for 'rendezvousing'. To rendezvous channel 1 with channel 3 we simply add the required values together (8+32=40) and then add this to the first value, in this case 5, to get the final channel status (40+5=45). So the final command will be SOUND 45, 478, 100. The effect of rendezvous is not noticeable here as we have only got one note, but later on, when we deal with simple sound effects, the theory of rendezvous will be put into practice, as will the use of NOT 'rendezvousing' the channels.

THE CHANNEL STATUS

Value (in decimal)	Effect
1	sound to channel one
2	sound to channel two
4	sound to channel three
8	rendezvous with channel one
16	rendezvous with channel two
32	rendezvous with channel three
64	hold
128	flush

Hold simply freezes the note currently in the sound queue and stops any other notes from being played on the channel until a RELEASE command is given. The RELEASE command uses the following values:

RELEASE 1	Free channel one
RELEASE 2	Free channel two
RELEASE 4	Free channel three
[And finally...]	
RELEASE 7	Free all three channels

To commence playing sound on all three channels simultaneously, a hold for all three channels can be issued by the following command: SOUND 71, 0, 1, 0.

The 71 is obtained by adding the value for hold to the three values for commencing sound on each channel. (64+4+2+1=71).

The duration of one is needed because if the duration was left out or was set to zero, then the default durations of 20 and 200, respectively, would be used, which we do not want.

Flush is the closest you can get to a music interrupt in BASIC. It clears the sound queue and stops playing the note currently be played and allows whatever note you sent after the flush to be played.

NEXT TIME

Well, that's just about covered everything for this month. Next I'll be detailing the use of sound envelopes and I'll also be looking at the extended envelope facilities of Rainbird's *Advanced Music System* (R.I.P.) and giving you some tips on their use.

By the way, if you have any really amazing sound effects or envelopes that you have created, why not send them to me? See you next time!

1) The SOUND command

[channel, pitch, duration, volume, volume env, tone env, noise]

The SOUND command is the main command (as you can probably guess!) for producing sound. In its simplest form, it needs only two parameters – channel status and tone period. The channel status tells the CPC what sound channel/channels to produce the sound on. The tone period tells the CPC the pitch of the note. This value has to be in the range 0 to 4095. See the appendix in your user manual for frequency numbers.

This two-parameter SOUND command, however, is not of much use apart from providing a 'beep' to notify the user about something in a program. This can in fact be more easily achieved by PRINT CHR$(7). However, the two-parameter command can be used for simple tunes in BASIC (and basic!) games, and perhaps quiz programs or similar. Program A is an example.

```
10 ' Program A
20 ' simple tune
30 RESTORE
40 FOR notes=1 to 21
50 READ pitch
60 SOUND 1, pitch
70 NEXT
80 DATA 239, 201, 239, 402, 358, 402,
   319, 319, 268, 239, 478, 536
90 DATA 638, 536, 478, 478, 402, 402,
   358, 478, 478
100 while inkey$<>" ":wend
110 GOTO 30
```

The program hardly needs any explanation. Line 30 simply resets the pointer to the beginning of the note data each time you replay the tune. You would not need the RESTORE if you only wanted to play the tune once. The program simply reads the note data from the DATA statements and plays them.

Although the above tune would work well in games like *Outrun* (i.e. it would stop the player from falling asleep!) and would make a Spectrum owner go green with envy, it is not going to go platinum in a couple of months' time (if only!). It lacks two main elements. A good rhythm and good sounds.

It's now that we can introduce the next parameter in the SOUND command. This is an important one, in that without it you cannot make anything sound musically acceptable and you cannot really produce decent sound effects without it....

Duration

The default value for this is 20. If the value for Duration is more than zero it tells the CPC the duration of the note in 1/100ths of a second. If you set the value for Duration as zero then the duration if the note depends upon the value of the volume envelope. If no volume envelope has been defined or if you don't specify which volume envelope to use in the fifth parameter for the SOUND command, then the duration is equal to 200, which is the value of the default envelope. The default parameters, by the way, are what produce that intensely annoying "BOOP!" every time you make an error in Amstrad BASIC.

Volume

This is the next parameter. If Volume has a value of zero then no note will sound. However, if you omit this parameter then the default is 4. If no volume envelope has been selected (by the fifth parameter... to be dealt with soon!) the value of Volume goes from 0 to 7. If an envelope is selected, the range goes from 0 to 15 (silent to extremely loud!). The principle of this is simple and should be easy to understand, but here's a quick example anyway!

```
10 'Program B
20 'Volume example
30 '
40 FOR volume=0 TO 15
50 pitch=100
60 SOUND 1, pitch, 50, volume
70 SOUND 2, pitch+2, 50, volume
80 SOUND 4, pitch-2, 50, volume
90 NEXT volume
```

This example also serves to show you the SOUND command in full use. You will notice the chorus effect. This achieved by using all three sound channels and varying the pitch slightly for each channel, so that rather than sounding dry and boring it gives a pleasant chorus effect.

Try altering the values after the pitch variable in lines 70 and 80 to alter this chorus effect. Have you noticed how the volume increases, then dies away, then increases again? This is because we have not selected a volume envelope and therefore 7 is the maximum volume level. If you try to use values higher than this (which we have in line 40) without having selected a volume envelope, then the volume level loops around to zero volume. In other words, volume levels 9-15 are the same as volume levels 0 to 7. But if we define and select a Volume envelope, then we can use values 0 to 15, without the volume level looping back to zero at value 9.

Confused? Well, why not insert the following lines into program B...

```
30 ENV 1, 15, -1, 1
60 SOUND 1, pitch, 50, volume, 1
70 SOUND 2, pitch+2, 50, volume, 1
80 SOUND 4, pitch-2, 50, volume, 1
```

The difference is quite astounding! Rather than looping back down to zero the volume level starts at zero and steadily increases until its maximum of 15.

Incidentally, don't worry if you don't understand the ENV command, I'll be going into this in greater detail in a future instalment!

Faster than ever

SPRITES ALIVE + COMPILER

Glenco Software, 15 Alford Lane, Whitehouse Farm, Stockton, Cleveland TS19 0QP. Tel 0642 606358 ● £29.95 disk, upgrade £7.50

The release of *Sprites Alive* was a great boon to BASIC games programmers on the CPC. It added several extra commands to BASIC especially for the creation of games. Now a new version has been released that comes complete with a compiler to 'turbocharge' your programs....

Any program has to be converted into machine code before the computer can understand it. There are two ways of doing this.



An interpreted language is converted as the program runs. When the computer looks at any particular line it is changed to machine code. Every time the computer looks at that same line it has to be reconverted – even if has to do so several times. All this slows down the speed at which the computer operates. A compiled language is much faster. The whole program is converted into machine code in one go.

The compiler in *Sprites Alive* doesn't make any claims to being a fully fledged compile-everything sort of program. Instead, it allows you to to use a subset of pseudo-basic, as well of course as the standard *Sprites Alive*, commands. Line numbers are not recognised, and labels are used to indicate jumps and the like.

The limited subset of BASIC means you'll have to rework all your programs before they are suitable for compilation.

The increase in speed you'll get with the compiler depends very much on what percentage of your program is in BASIC. All the *Sprites Alive* commands are efficiently coded already, and if your program is made up mainly of these instructions then there probably won't be a massive difference. If your program is very dependant on BASIC, however, then the speed gain should be more noticable.

The beauty of *Sprites Alive* is that you don't need an awful lot of BASIC – just enough to string the RSXs together. So you can probably get away with not using the compiler for most things. However, the compiler can tidy up those loose ends, resulting in clean, compact code. It may well give your games just the touch of speed that they need.

Included with the package are a couple of example programs. One, a *Tetris* lookalike, shows just how effective the compiled code can be. It certainly gives the original game a run for its money.

If you already have the original *Sprites Alive*, then it's well worth upgrading to the compiler version – particularly when you can do it for just a few quid. Glenco has been very generous in only charging the difference to existing users. If you don't, then the *Sprites Alive Compiler* package is an improvement on an already excellent program. It's looking more attractive than ever.

● **The original version of *Sprites Alive* cost £22.95. For a full review see *AA*52.**

IT'S COMPO TIME AGAIN!

Fancy writing your own super-fast games with your very own copy of *Sprites Alive*? Well, five lucky winners will be – for free! And to think that all they had to do was answer three little questions...

1. Everyone knows that a Sprite is a moving graphic block. But what else can it mean?
a) A nimble Elf-like creature?
b) A can of orange pop?
c) A light spar pivoted at the mast and crossing a fore and aft quadrilateral sail diagionally to the peak?

2. A compiler converts BASIC to machine code. What kind of language is BASIC?
a) A Swahili dialect?
b) An interpreted language?
c) A sea in Northern Europe, connecting with the North Sea by the Skaggerak, Kattegat and Oresund?

3. The famous massacre of the Macdonald clan by the Campbells took place where?
a) Macclesfield?
b) Glasgow?
c) Glencoe?

We want your entries by July 1st. Send them to: Sprites Alive Compo, Amstrad Action, Future Publishing, Beauford Court, 30 Monmouth Street, Bath BA1 2AP.

FROM THE HORSE'S MOUTH...

We spoke to Glen Cook, author of *Sprites Alive* and Boss of Glenco, about his program.

So why the compiler? Is *Sprites Alive* not fast enough without it? Does *Sprites Alive* actually need a compiler?
The compiler's needed because even though there's only a very few BASIC statements in Sprites Alive, *it does tend to slow down a program when it's running. If you look at the same program running in BASIC and then running after it's been compiled, it's amazing the difference that a few BASIC commands make.*

Do you plan to do any further upgrades to the program, or do you consider it totally finished?
Possibly around Christmas we might be doing a couple more additions to it. It could include music within the programs. A Play command where you put music in a string and the computer happily plays away – we intend to do that.

Do you plan to release any of the games created on *Sprites Alive* as commercial products? Indeed, do you think it's capable of creating games of commercial quality?
I believe they could be of commercial quality compared to budget games. We're running a competition whereby anybody who uses the Sprites Alive *compiler can send in the games they've written. A compilation disk released towards Christmas will include the best games written using the compiler.*

Do you plan to do any other CPC projects other than *Sprites Alive* in the future?
We're currently thinking about doing a program similar to Mini Office. *More proffesional-looking and with a lot more features...*

Free for all!

The public domain section is rapidly turning into the David Wild section! Yet more excellent software written by the man from Withernsea has surfaced this month, as JERRY GLENWRIGHT finds out...

Gather round chums and dim the lights, for what I am about to share with you is deadly secret, desperately daring and decidedly dodgy!

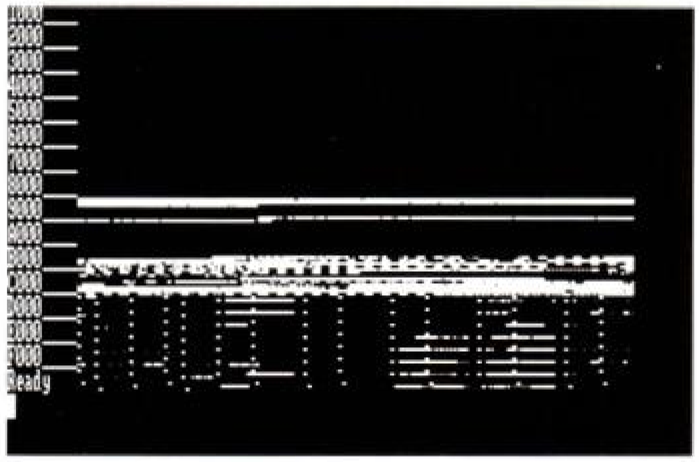
Now I know that you're not a pirate, and would never think of copying a game and actually distributing it to your friends at school or work, but haven't you ever wondered just how the programmer of that arcade corker went about protecting his wares? After loading the game and playing it for the nth time, haven't you wanted to know just how to cut out the long loading screen and music introduction and get straight on with the carnage. And when you've lost every life 18 games in succession, wouldn't it be nice to cheat just a little bit and equip yourself with infinite lives? Shall I stop asking questions and get on with it?



● *Hack* gives you 17 different commands for delving into the depths of machine code.

Hack, from the prolific David Wild of D W Software, is a little assembly language program which hides itself away in memory and provides a set of cunning extensions to the BASIC command language in the CPC. Using *Hack*, you can examine, change and generally explore RAM memory, files on disk and the internal architecture of the CPC, including all registers.

Type **RUN"HACK** at the system prompt and, after a brief program message, the hacker's delight is up and running. *Hack* runs in the background, which means that once it's initiated, you won't even notice it's there. You can program, run software and interact with the CPC without problems, and with the aid of the | key and one of the seventeen commands, great power is at your disposal.



● *Hack*'s |RAMVIEW command lets you see which parts of the CPC's memory are being used.

For example, maybe you've just run a commercial arcade game, but you're sick and tired of running out of lives. Issuing the command |cheatfind,start,length will enable you to search through the memory locations specified in the start and length variables for machine code occurences of the commands such as INC A, DEC A, INC(HL) and DEC(HL). Why? Let me explain. Arcade games – in fact all games software – makes use of flags and counter variables to keep track of what's happening in the game. If you've just lost a life, then somewhere, a variable will need to be decremented in order to show that loss. Sooner or later (usually sooner...) the variable will equal zero, all your lives will be gone and the game is over. To perform this decrement operation, the value of the variable is read into the accumulator or register pair HL. |cheatfind, searches all the specified memory locations finding accumulator and HL register decrements. Once found, it's a simple matter of poking the relevant location to nullify the effects of the decrement or to award yourself infinite lives!

But what if you can't stop the game you're playing, or it's been cleverly programmed and clears out memory when finished? *Hack* provides a neat little command by the name of |break.on. This enables you to set a break point – effectively a full stop – anywhere within a machine code program. When the break point is encountered during execution of the program, operation is suspended and the machine is returned to BASIC awaiting a command from you – time to fire up |cheatfind, perhaps?

|discread,track,sector enables you to examine any sector on a disk, thereby effectively bypassing all forms of copy protection. You can simply look at and alter the game before it's even read into memory. |discwrite returns altered sectors to their original location on the disk.

Need to strip the game's protection code and write the stripped game out to disk? Then |incopy,source,dest,length will copy any length of memory specified in source and write to a destination 'dest' with ease.

Adventure gamers know just how difficult it is to guess correctly passwords, door-opening spells and the like, but with *Hack* in memory, guessing is a thing of the past. |textsearch,start,length displays in ASCII any sequence of alphanumerics more than three characters in length. Fire up your adventure, wade through memory using |textsearch and Bob's your Aunt's live-in lover, instant passwords!

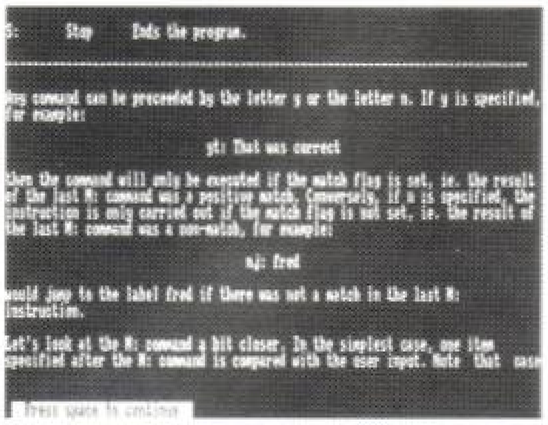
Hack provides seventeen commands specially chosen for the discerning hacker and cracker (but not pirate!) including |deek and |doke (double location memory peeking and poking), |printer.on/.off so that you can dump the results of your searching to a printer, |ramview for a graphical representation of RAM, |Mdump for a hex dump of memory and many, many more. All in all, a program that no self-respecting games freak should be without and one which takes pride of place this month. *Hack* is on a David Wild disk near you.

Bailing out

At the beginning of the 1980s, when home computers where first beginning to make their mark, the microcomputer was put forward for a lot of possible uses – solving the household budget, switching on lights and burglar alarms, running power stations and playing an important role in schools educating children.

Of course the ability of these micro-tots to get to grips with new technology was grossly underestimated and, consequently, several teaching languages were introduced to provide a gentle introduction to programming. Probably the best known of these is Logo, which is still has a few desperate supporters (Although Heaven only knows why...), but which is almost completely forgotten. But there was another language available; not quite as basic as Logo yet designed to give simple hands-on experience of programming – and that language is PILOT. Developed in the '60s, PILOT consists of five simple commands represented by a letter and colon and followed by an argument. The commands are T: which outputs text messages to the screen, A: which accepts input from a user, M: which matches input from the user with a predefined string







● PILOT comes with a full-size on-screen tutorial on the language.

(used to test the validity of user input), J: which jumps to a previously specified label and S: which stops the program.

Doesn't sound like very much to write programs with, right? In fact, these few simple commands can facilitate the construction of quite complex programs and although PILOT is simple to learn, it is difficult to master. For example, to test the arithmetic abilities of a user:

```
T: What is 9 x 9?
A:
M: 81
YT: Well done!
NT: Bad luck, the answer is 81.
```

s: T: is used to ask the read to answer the following question, A: accepts his or her input and M: test for its validity. If the answer is correct YT: prints out a well done message (any letter can be prefaced with Y or N to symbolise the correct matching of an M: test).

PILOT enables novice programmers and rank beginners to try their hand at constructing useful software. The language provides an easy way into the correct type of analytical thinking necessary for good programming and yet PILOT has never caught on. Is it good, is it bad, why has PILOT failed? Get a copy of PILOT from a PD library near you and make up your own mind.

Brain teaser

What's the biggest selling magazine type in the UK? Women's mags? Girlie or motoring mags? Gardening, sport or computers? No, puzzle magazines!

Crosswords, spot the difference, word searches and all the other addictive teasers sell more issues than all the other magazines on the newsstands put together. But at a quid a go, enthusiasts are spending a lot of money. Wouldn't it be nice to construct your own word searches? It's a good idea, but time-consuming, and you'd know the locations of the words before you'd even started – not much fun there.

Enter the CPC. Your friendly little computer is perfectly suited to the arduous task of creating mind-bending puzzles of every type, but particularly adept at word searches with the aid of *Wordsearch Generator.*

Fire up the program and you're regaled with a grid. You can move around this grid adding words hither and thither or move outside the grid in order to add extra information, clues and the like. There's no need to type in all the disguised characters, either, because the program will generate them automatically. Then your newly created masterpiece can be saved to disk and output to a printer so you can give copies to all your friends.

Simple to use, *Wordsearch Generator* is a must for puzzle fans everywhere.

WHERE TO GO

- WACCI UK, 9 South Close, Twickenham TW2 5JE. Telephone 01 898 1090. As well as being a public domain library, WACCI is a fanzine of truly singular quality. Bung a couple of quid to 9 South Close and you'll receive a smaple issue with the PD lists contained therein. But do it today, becuase the WACCI library is a CPC-specific library second to none in the UK.
- DW Software, 62 Lascelles Avenue, Withernsea, North Humberside HU19 2EB. DW is the source of the marvellous WIMP environment desktop reviewed last month, as well as an gargantuan grab bag of other quality programs. Six clams will get you a PD disk positively bulging with superior software.
- Got a cassette-based system, and feeling left out of the fun? Tough! No, no, don't shuffle away sulking. Send a blank cassette and 40 new pennies to Robot PD library, 2 Trent Road, Oakham, Rutland LE15 6HF and you'll receive a tape jammed packed with goodies. If you're one of those retiring careful types who consider the idea of sending off *40p!* to an unknown address absolutely outrageous, you can send for a free catalogue by contacting the above address (at least include a stamped addressed envelope, huh?).
- The CP/M User Group, 72 Mill Lane, Hawley, Dartford DA2 7RZ. The best CP/M user group in the UK and they have lots and lots of quality PD. Bung them a few quid for a copy of the latest newsletter.
- TUG II 0905 775191 V21/22/22bis/23 8N1. A bulletin board with a lively CPC section and a large amount of downloadable code. The board operates for 23 hours a day (what's this guy doing for the other hour?), so you should be able to make contact.



● To design your own wordsearch grid with *Wordsearch Generator* you first put in your words...



● ...then get the software to fill in the rest of the grid.

DOING THE BAUD WALK

Public domain software is cheap, right? For the price of a disk and copying you can have access to some excellent applications, utilities, games and languages. But there is a way to bypass even the miniscule copying and disk charges and save even more cash to spend on peripherals for your groovy CPC. How? Bulletin boards. These are the electronic equivalent of the standard pin board you use to exchange notices and information at school, college and work. If you have a modem (the black box of bits necessary for access to these boards) and a telephone line, then you have the means to get your PD software – and the *Amstrad Action Type-Ins*, for that matter – entirely, utterly, completely free, gratis and for nothing (well, almost! You *do* pay for the phone call).

Many of the current PD libraries springing up around the UK started their collections by downloading – i.e. transferring across the telephone lines – electronic skipfuls of public domain software.

Remember, it's all free but for the 'phone call charge – and that can be next to nothing if you're wise and restrict your adventures on the airwaves to evenings only. Cast an eye over our *Where to Go* box for some useful telephone numbers.

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NOTES
3½" discs do not turn over like the 3" ones. The drive uses both sides but to you it looks like 1 huge side.

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NOTES - please read
Ramdos is the only one of the 3 operating systems that will work in CPM. When buying Romdos, the Ramdos disc is also included. Rodos version 2.15 and Protext do not work together.
Please phone to confirm the availability before ordering a 6128 rom.
The Romboard Xtra is now sold out and no more will be produced due to the lack of availability of the 6128 rom.
The 3.5" disc boxes will hold 3" discs but not as many.
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ACTION TEST

***Turrican* and *E-Motion* all in one month? – we're just too good to you!**

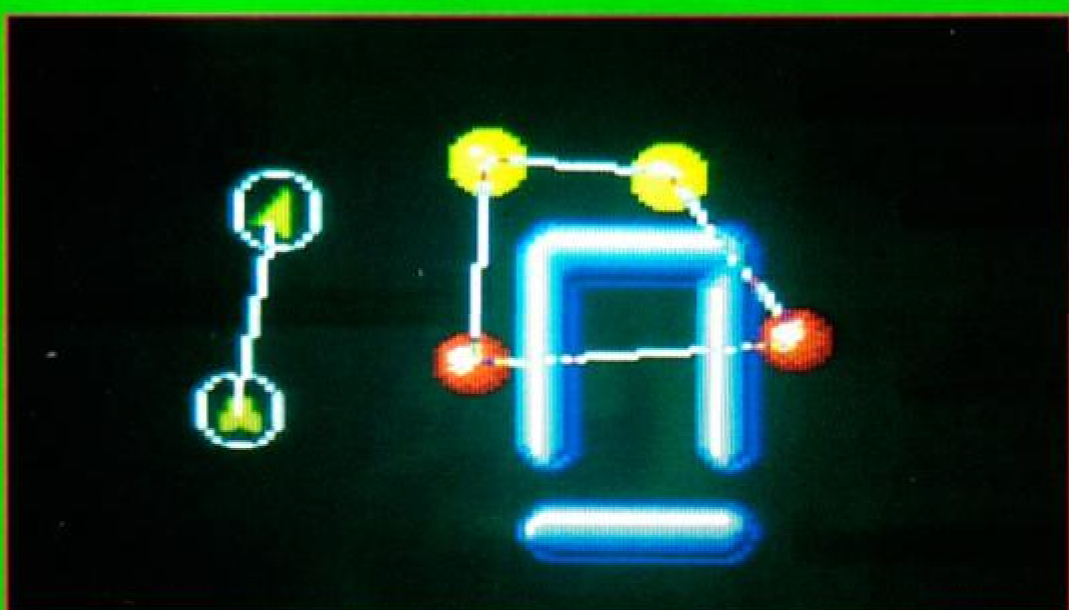
“There's nowhere to run – and nowhere to hide!”

Is Turrican *the most evil, destructive, vicious and downright lethal blast-em-up to date?*



“Play it badly and you'll scream!”

The dawning of a New Age of computer games, or just Thrust *with, er... spheres?*



Also reviewed



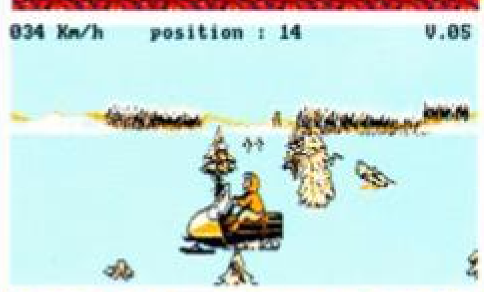
● Is Empire's *Pipe Mania* destined for greatness or heading for the tubes? Find out on page 50.



● As England heads for the World Cup, *World Cup – Italia '90* heads for the software charts. Find out which one's got the best chance on page 60.

PREVIEW CITY!







● Find out what's coming your way – and what you could be missing – on page 44.

TENNIS Cup

The World Cup's bid to dominate TV screens this summer faces strong competion from the Test Matches and Wimbledon. The French don't understand cricket, so Loriciel has plumped for a tennis sim of epic proportions. *AA* has grabbed hold of the French version, donned its dapper white trainers and headed out on the court for a knock-up.



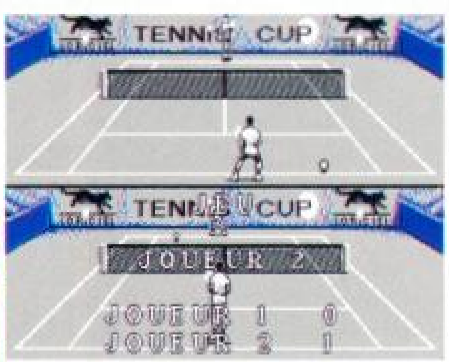
● A titanic battle of (half) wits.

Tennis is a two-player game. Now that may sound obvious but it's true. It's a one-on-one duel and to play it well you have to be aware of your opponent's postion almost as well as judging the ball's flight. *Tennis Cup* serves an ace here. The graphics are clear and large, making postioning simple, with the screen split horizontally so you can see the court from behind each player.

This means you can watch yourself at the top and at a glance check where the other player has moved. So, if you're in the right place to hit the ball it's easy to try and wrong-foot the other guy. It also makes the two-player game much more interesting. There's none of the control loss associated with an overhead view, and no-one's at a disadvantage by being placed at the far end of the court.



● Player 1 serves an ace.



● Player 2 takes an early lead.

Playing and control, though, is the true heart of any good sports sim, and Tennis Cup has it by the wagon load. With a whole range of game and practice options, you can hone true tennis skills before the big tournament. The players scuttle across the court at a mighty pace (though not fast enough to make up for bad footwork). Players can spin or slice the ball, and there's always the chance to use back or forehand if you want to get really technical.



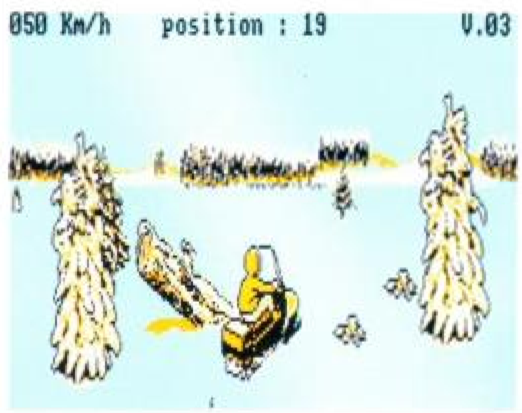
● Serving is quite straightforward. Returning serves, less so...

The game's finished in French, so all it needs now is a few translations and we'll be ready for strawberries, cream and a crushing defeat during Wimbledon fortnight on the TV and at home. With the game's option for choosing between concrete, clay and grass, it may even last the whole season.

HARR

This one may not see the light of day in the UK simply because the massive TV coverage the event got in France failed to materialise here. This is a crying shame, as the game itself is an absolute cracker.

Harricana is a cross-country snowmobile race through the depths of Canada's snowswept wastes. The game lets you take a seat behind the handlebars and plunge into the wild white yonder. Using a map (supplied in the box) there's the option of either following the set track or ploughing across uncharted terrain, hoping to find a short cut.



● No roads here. Just as well you've got a map.



● Sideways is slow, but sometimes necessary.

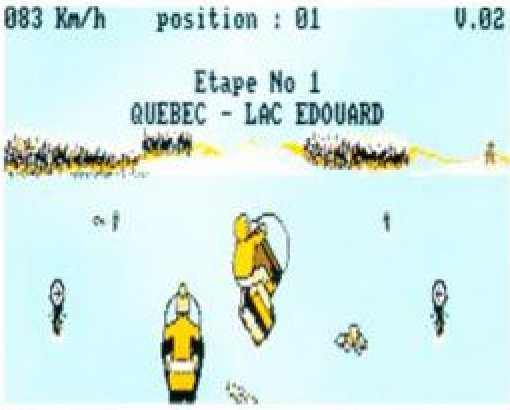
The game has been given a comic edge, with cartoon racers in all manner of woolly hats and gloves, but the competition is fierce regardless. The snowmobile heads straight into the terrain, but can also move at a 45-degree and 90-degree angle to allow you to avoid obstacles. Luckily the snow bikes can also go in reverse (which the real ones can't) – a useful trick when you have an argument with an immovable rock!

Now there are obvious dangers associated with charging into a forest at 60 mph. They're called trees! Hit a fallen one and it

…ICANA

will either bounce rider and snowmobile into the air or spill you into a drift. At this point the animation takes over and the little guy jumps up, kicks his machine and leaps back on…

It's one of the most novel and interesting



● Even a little rock will throw your balance.

racing sims for a long time, and the graphics used make it great fun to watch and play. Who knows, one day we may get a chance to



● Disaster!

blast across the wastes just like the French! Come on US Gold, let us play too!



● A great game, but will we see it over here?

ASTRO MARINE CORPS

The 'Moves' bunch (*Army Moves, Navy Moves etc*) is back again and it's been working on something really special for the last few months. It's run



● Typically bright, colourful graphics.

away to join the Astro Marine Corps, a hardy band of individuals who are having a little disagreement with a crowd called the Deathbringers.

Now the Deathbringers are an unoriginal bunch and are still intent on conquering the galaxy, even though everybody else has got into co-operation, peace, happiness and generally being nice to each other.



● The parallax-scrolling backgrounds are excellent.

The AMC sends its best trooper (guess who that is?) out to stomp the Deathbringers



● Arrrgh! – Being eaten by a pit-monster.

in a righteous style. Armed with a variety of very pretty and highly effective weaponry, the game takes you through seven murderous levels of explosions, nasties and traps in a bid to save your beloved planet from destruction.

The pics and the scrolling are excellent, as per usual. Explosions make your day worthwhile, while the flame thrower on offer is a real show-stopper. Best of all,



● Tough monsters – and tough weaponry.

though, are the aliens who run around the place. Slime puddles leap up and swallow Marines whole, as do *Little Shop of Horror*-style Audrey II's nests of vines. Firepower and death is all over the place.

There are two loads (as with most Dinamic games), so once you make it through to the second section you'll never have to fight a pink worm again. *AA* has seen the finished version and will be bringing you a full review next



● Periodic lightning flashes add to the drama.

month. But from what we've seen already it looks to be a killer, with one of the biggest (and most mobile) end guardians yet. One thing, though – remember this a Dinamic game, so you can guarantee it won't be a quick finish…

E-MOTION

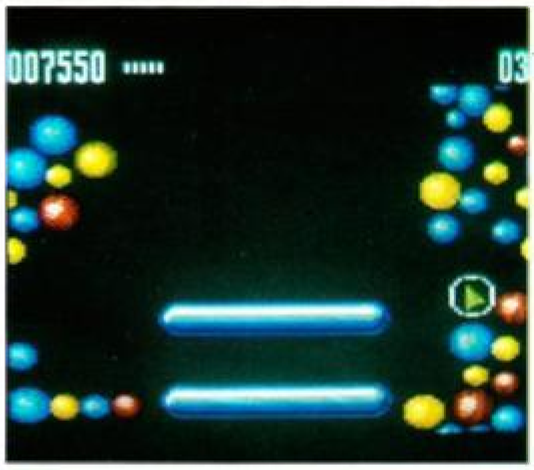
US Gold ● £9.99 cass, £14.99 disk joystick/keys



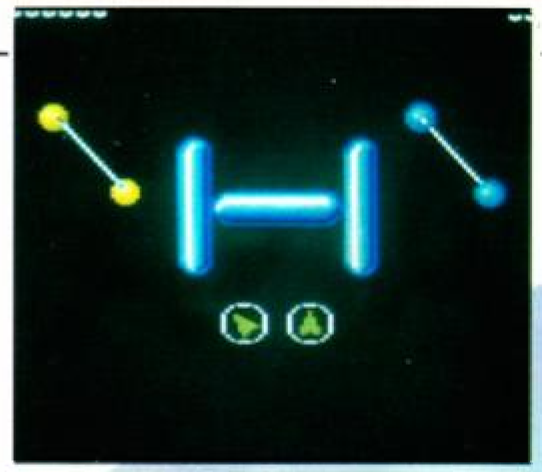
In 1905 Einstein formulated his first special theory of relativity. When, in 1912, he followed this up with a law of photochemical equivalence, the scientific establishment was rocked to its foundations. Einstein had begun a process that eventually would lead to quantum physics, nuclear war... and *E-Motion*.

Of the three, *E-Motion* wins hands down. You don't need a degree to understand it and the neighbourhood doesn't glow in the dark afterwards. Besides, it's fun! Frustrating and pretty, it's a 'New Age' computer game that will have you staring goggle-eyed at the screen for months to come.

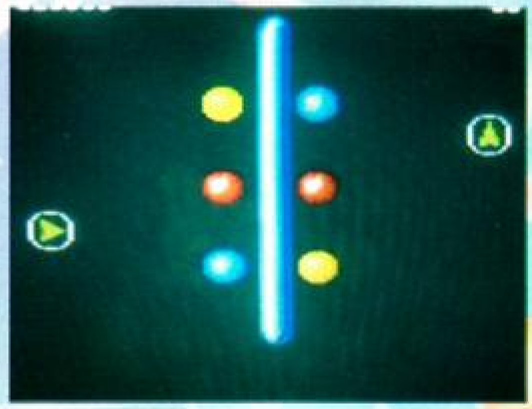
E-Motion is an adventure in the world of molecule tugging and towing. You (and for max fun a mate as well) are in control of a small triangular ship (two ships if there's two of you, natch) enclosed in a circular shield. Also on screen are some rather large coloured balls. Sometimes these are tied together, sometimes you are tied to them, sometimes both ships are strapped together. No great problem, until you discover the ropes are elastic (*er, I think they might be covalent molecular bonds, actually – ed*). Stretchy rubber things, they allow travel just so far before they fling you off in the opposite direction. The second little – well, major, actually – stumbling block is the wrap-around screen. If you stray off the bottom off the screen, you reappear at the top with thrusters firing, a taut rubber rope to contend with and disaster looming.



● Chaos reigns on Level Two.



● E-Motion is at its best with two players.



● Some levels are more [illegible] than others.



● One of the very fast sub-games.

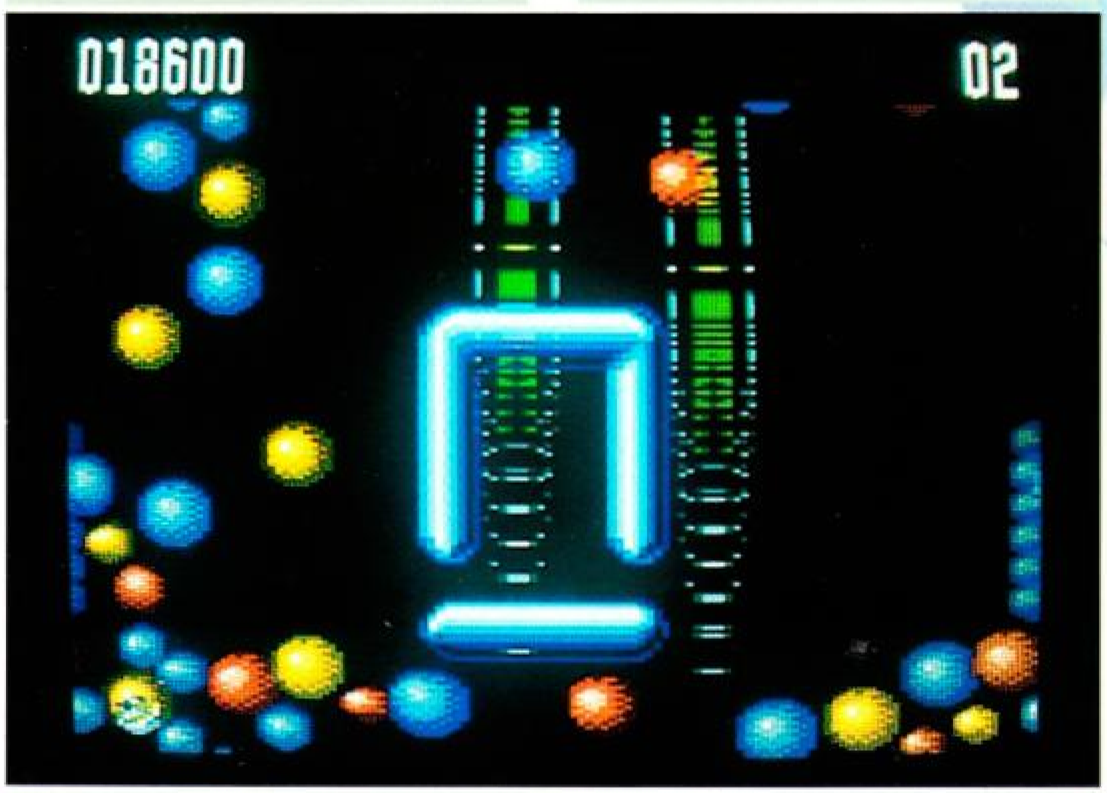


● Disaster!

The aim of this rather odd game is to force spheres of similar colours to collide, making them disappear. If two different colours touch they produce a smaller sphere of a third colour. This small sphere can either be collected immediately – giving you energy – or left to grow into a full sized ball in its own right. After a set period of time, the full-sized balls start to pulse, warning that if you don't trash them soon, they'll explode, stripping you of exceptionally valuable energy, and possibly (probably) wiping you out altogether.

So the priorities vary. You either try to destroy the balls before they explode, or have a go at collecting energy from mis-matched collisions, hoping to get beefy enough to survive the next explosion. Alternatively, you may just go for chaos and watch all the pretty balls explode in a cascade of colour. Fatal, but fun.

That – in a cold, logical, empirical, physics



● Keeping up your energy's none too easy – and lose too much and you're done for.

SECOND OPINION

"Thrust fans will love it – all those old techniques come flooding back. Two-player mode is the best feature, though, if only because you can't stop bawling instructions at each other! Los Alamos was never like this..." **RL**

GREEN SCREEN

Hard going in green.

sort of way – is it. The two players just try to clear – or survive – a succession of screens, progressing to ever harder levels. But, contained within this simple concept is some really nifty gameplay. Subtlety is the key. There's exceptionally little friction in the *E-Motion* void, so thrusters have to be used with extreme caution. To get a sphere moving you need to give it a healthy nudge, but once it's off there ain't no stopping it. Cries of anguish are your only recourse as the best laid plans of molecules and men are sent awry by a freak collisions.

To make matters worse, there's something Uncle Albert wasn't letting on about when he went into detail about sub-atomic structure. Somebody's been there before, and they littered the place with metalic shapes specifically to wind up the *E-Motional*. Bars, squares and tubes separate balls that are begging for a quick collision. So any would-be winner has to start using the wrap-around just to get their balls to touch (*OK, that's enough sniggering – ed*).

Throw in a few rubbery ropes holding the spheres to the frames and there's pain in the head just waiting to happen. Add the confusion of two players going after the same spheres and hordes of small energy balls bouncing all around the shop, and the resultant chaos is magic, pure magic.

The real secret of *E-Motion*'s success is its fabulous two-player mode. The score gained for collecting energy, touching spheres and finishing levels is shared! None of this "I got more than you!" trash. To survive you've got to work together with a coherent plan - which is where so many promising *E-Motion* games start falling apart. Its amazing how two ships flying directly towards each other can hit the same object and send it hurtling in the one direction that spells doom, so often!

Graphically, the game itself couldn't be simpler. The ships are little more than triangles, the spheres just... well, just balls of different sizes and colour. The ropes are simple lines and the metalic frames are the only arty bits around. This is its charm. Minimalist graphics do have their place and it's here. Once a sphere has accidentally been hit and split the game gets confusing enough with ships, ropes and balls all over the place. Too many tarty pics would have made it unplayable. On the downside, once vast numbers of balls have been created, a slow-down is noticeable. The ships no longer fly so much as *chug*. Technically a bad point, it actually increases the tension as the moving gets more laboured, the time shorter and players more desperate.

Albert Einstein (1879 – 1955)

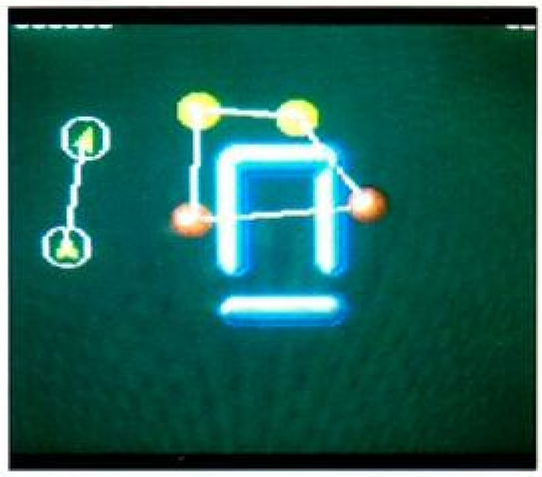
Born in Ulm, the world-famous physicist was educated at Munich and Zurich. He held professional chairs at Zurich and Prague. When forced to flee because of the rise of Nazism, he became a professor at Princeton University. The founder of modern physics, he is credited with contributing more to our theoretical knowledge of the universe than any person since Newton. In fact, the scientific world was so chuffed with his work that it bestowed three great rewards on him. 1: The Nobel Prize (1921), 2: They named an element after him (Einsteinium), 3: They invited one his relatives to the launch of the CPC! (True fame or what?)



As you'd expect with a game that features sub-atomic particles, it ain't exactly symphony city – what noise do pi-meson's make anyway? There's a suitably weird intro tune and few 'boings' during play. Once the game gets under way, though, it's hard to remember if there's any sound, you're too deep in concentration merely trying to stay alive.

Play *E-Motion* for too long and the head throbs. Play it badly and you'll scream. Sit down for a game when you're in tune and the results are astounding. Balls will collide where and when you wish, impossible situations are simply solved. Somehow, things begin to exhibit a certain rightness that makes all the effort seem worthwhile.

If *E-Motion* marks the dawning of a New Age of games then it's a welcome change. It doesn't relax you in the way it claims on the box, but who plays games to chill-out? That's what the TVs for, not your CPC. Games should challenge the wit and dexterity of the player, and you'll never face a harder challenge than level 50 of *E-Motion*. You won't have learned anything useful about quantum physics, but who cares? **TW**



● Now how do you get those balls to touch?

FIRST DAY TARGET SCORE

Reach Level 7

The Verdict

GRAPHICS **66%**

☐ Clear and simple graphics.
■ Nothing special to look at.

SONICS **57%**

☐ Relaxing tune at the start.
■ Nothing special to hear.

GRAB FACTOR **93%**

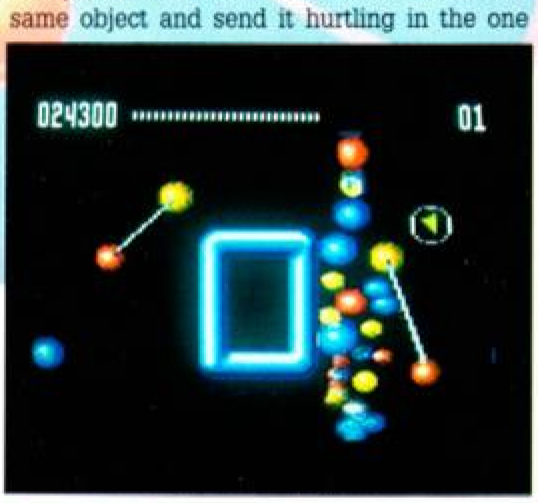
☐ Instantaneous, spontaneous, addictive power.
☐ Something very special to play.

STAYING POWER ... **94%**

☐ 50 mind-bending levels.
☐ Simply unique.

AA RATING **92%**

☐ *E-Motion* is A-Mazing.



● Nightmare!



● What a wonderful second level!



● This level's easier than it looks (honest).

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NB: We regret that due to supply problems Database software are unable to supply any AMX Mice at present. This situation is not expected to improve until June.

BOOKS/MANUALS

Advanced Amstrad Graphics	7.95
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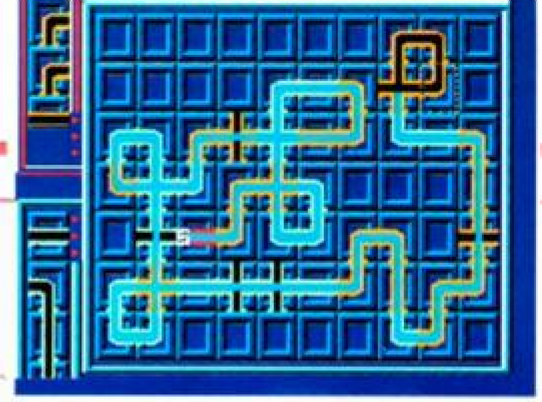
Proprietor M J Cooper

PIPE MANIA

Empire ● £9.99 cass, £14.99 disk joystick/keys



● Replace duff pieces by blowing them up.



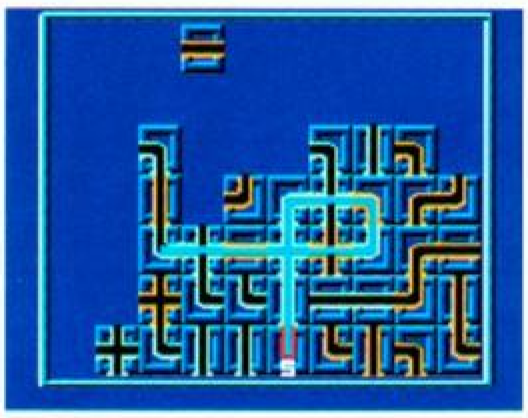
● Five crosses means mega points!

Plumbing has never been a glamorous profession. Given the choice, nine out of ten gamesplayers say they want to be a movie star and not put their hand down somebody's U-bend...

...that one in ten, however, has played *Pipe Mania*, and knows the world of pipe-fitting is about as exciting as mortal man can stand.



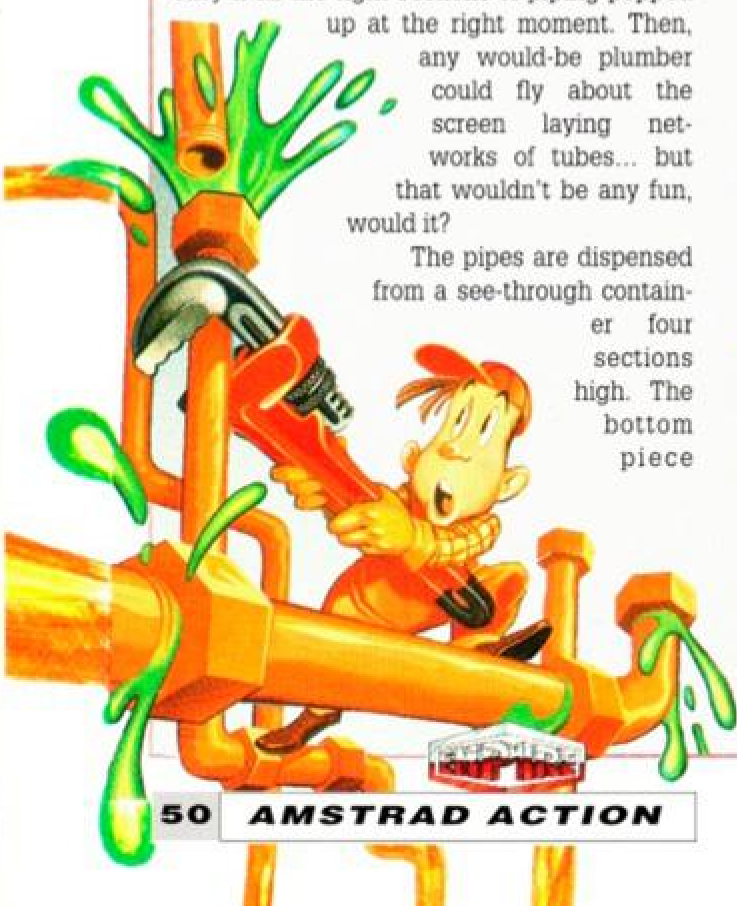
There's this grid, see, and in the middle is a valve. And in a few seconds that valve will begin to leak horrible green gunge – so fast and decisive action is needed to avert disaster. To save the screen from a soaking, there's a pile of pipe pieces placed to one side. They must be used, in sequence, to create a circuit through which the liquid can flow for a set number of grid squares.



● The sub game's like *Tetris* gone crazy!

None of this soldering/welding business is needed when fitting the pipes, thankfully. Simply guide a cursor over the square you want to plumb-in, press the fire button, and bish, bash, bosh it's down. Now life would be easy if all the right sections of piping popped up at the right moment. Then, any would-be plumber could fly about the screen laying networks of tubes... but that wouldn't be any fun, would it?

The pipes are dispensed from a see-through container four sections high. The bottom piece is the one you can currently use, but it's also possible to see the what the next three pieces are to aid in planning (or panicking) ahead. With corners, crossroads, straights and one-way pipes, the wrong bit invariably turns up at the right time. When slime's oozing through the pipe you've already laid and you desperately need one specific shape to save the day, guess what shape you're bound to see sitting happily at the top of your stack, gloating!



There are two ways to deal with the above situation – OK, three, if you count throwing a wobbly! Firstly, you can go to where the right piece of pipe would go if only it would have to decency to show up, and keep pressing fire – effectively laying then destroying piece after piece until the right one turns up. 'Bombing' costs points, though! More together plumbers can try to use the pieces they don't want at the moment to build up a network for later. The danger here is becoming obsessed with the new bit, forgetting the tide of slime about to spill onto the grid.



● Level 33 gets nasty.

In two-player mode you can try to work as a team, yelling out who's laying what and where (*sounds like* Dallas... *er, no, forget I said that – ed*). Or if you want to be cruel and go for the big score you can 'bomb' out opponents' pieces with your own. Points are only scored when the gunge goes through a section of pipe. You can tell the pipes apart because each player has a different coloured set of tubes, and a different colour marker. This latter course of action, while fun on the lower levels, won't do either player much good when the going gets tough. On levels 20 plus, the liquid positively spurts out of the valve and so teamwork's essential just to survive.

Every four levels there's a password and a sub-game. But when you fail to go the distance with a pipe system, then it's game over – no credits, no hope, no future. So passwords are vital if you don't want to play every level, every time. There are masses of little tricks and bonuses for the better player to go for. Using five crossroads earns bonus points and looks really pretty, while doing the virtually impossible and filling every eligible square with a connected pipe is score central!

On the later levels (there are 36 in all) there are start and finish points, and still a distance quota to meet. Throw in blocked squares and bridges to cross, and it takes on the nightmare proportions of London tube maps than the bathroom variety.

While only average on the graphic front and mediocre on the sonic level, *Pipe Mania*'s playability is overpowering. Once you finish a game, you won't want to play anything else until you know every password. More sub-games would have been fun, but even this cannot prise loose *Pipe Mania*'s vice-like addictiveness. So if you ever spring a leak in the middle of the night and need a plumber, but none of them will answer the phone, just play *Pipe Mania* – it's probably what *they're* doing! **TW**

SECOND OPINION

"Plumbing has never been so much fun. Pipe Mania isn't a graphical great, but has so much playability that it's guaranteed to send you round the bend!" AW

GREEN SCREEN

Green pipe is fine.

FIRST DAY TARGET SCORE

Reach Level Eight

The Verdict

GRAPHICS 66%
- Colourful and clear.
- Limited by the nature of the game.

SONICS 55%
- Tolerable tune and effects.

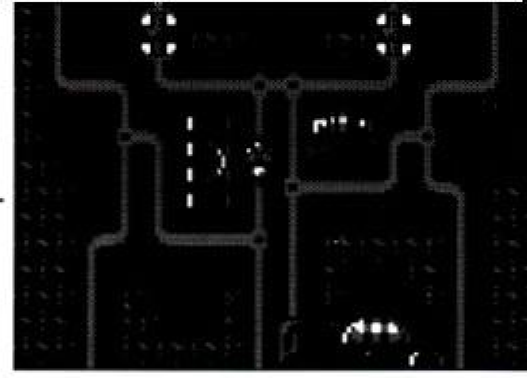
GRAB FACTOR 91%
- An instant smash.
- Password power makes life easier.

STAYING POWER 83%
- 36 levels of piping hot fun.
- Play, play, the game.

AA RATING 88%
- One day, all games will be made this way.

MICRO MOUSE

Mastertronic ● £2.99 cass joystick/keys





It's a well-known fact that the most cost-efficent way to repair supercomputers is to use robot mice. At least it is in *Micro Mouse*. Here, electronic mice are used to repair the burnt-out circuit boards of computers. But before they can do any of this they need to be trained. That's your job.

You take control of the little rodent as he scampers around the circuit board looking for breaks in the tracks to mend. As always, things aren't as simple as they could be, and miniature baddies patrol the circuit intent on causing as much mischief as they can. The beasties come in three varieties. One type runs round the circuit randomly, inflicting damage when it runs over you. Then there are others which actively come looking for you. The third category is a kind that causes damage to the circuit board as well as to your furry friend.

Unfortunately, your little mouse is defenceless against these energy-zapping nasties, and the only thing for it is to avoid them.

Movement is confined to running along the tracks of the circuit board. So if a nasty is heading your way and there's one approaching from behind then it's curtains. This is one of the game's shortcomings. It's very difficult to avoid collision once there's a beastie on your tail.

Graphically, it ain't no oil painting. The backgrounds are not particularly well drawn and the sprites are miniscule – maybe that's why it's called *Micro Mouse*! Nevertheless, they are functional, and everything looks clear enough – nothing gets confused with anything else.

Soundwise, the game is a stunner, with a really excellent title tune. You know the sort of thing – lots of little pitch bend effects. In the game, though, it's back to basic spot effects. You can't have everything.

The idea behind *Micro Mouse* sounds good. The game is well programmed, and well polished. Sad to say, then, when it comes down to playing the game it rapidly becomes tedious. The nasties become inescapable, and it's just not fun to play. AW

SECOND OPINION

"I like the idea. We won't talk about the rest." RL

GREEN SCREEN

Doesn't help.

● Graphically poor, and ultimately dull.

FIRST DAY TARGET SCORE

Get to the second circuit board

The Verdict

GRAPHICS **59%**
■ Small, undetailed sprites.

SONICS **86%**
□ Good title tune.
■ Spot FX only in game.

GRAB FACTOR **57%**
□ Interesting concept.

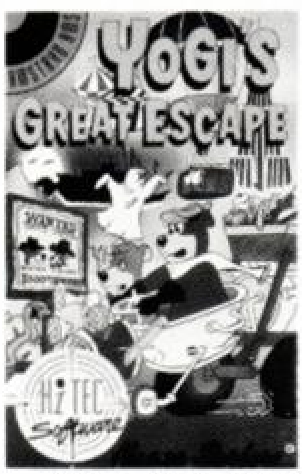
STAYING POWER ... **32%**
■ Inescapable baddies.

AA RATING 48%

■ Quickly becomes boring.

YOGI'S GREAT ESCAPE

Hi-Tec ● £2.99 cass joystick/keys



Jellystone Park is to close for the season. All the animals are to be taken to the zoo – all, that is, except for Yogi bear!

On hearing the bad news, Yogi vows to escape. So off he trots, through Jellystone Park in his bid for freedom. He's not going to get away that easily, however. Hot on the trail is Ranger Smith. If Yogi doesn't get a move on, he'll be spending summer under lock and key after all.

Yogi is aiming to spend his unofficial vocation in the city – New York City – and the journey is not a short one. Neither is it straightforward. Yogi will have to make his way through the most hostile terrian this side of the Rockies if he's to get there. Luckily, there's plenty to eat on the way, courtesy of loads of unguarded picnic hampers. Enough to appease even the hungriest bear's appitite.

Yogi's Great Escape is a platform jumping game. The big bear has to jump from ledge to perilous ledge to make progress. There's plenty of obstacles to negotiate, too, ranging from natural hazards to trained trappers and moving platforms.

When the right-hand edge of a screen is reached, the view flicks to the next screen. The levels are quite long, and with six of them in total there's a fair amount to the game.

Backgrounds are very nicely drawn in a simple cartoon style. The sprites look good, as does Yogi himself. There's no tune in the game, and spot FX are rudimentry and minimal.

Yogi is easy to control. The obstacles, whilst tricky at first, can be learned and mastered. Only one real critisism of the game - where's Boo Boo? AW



● Will Yogi escape? That depends on you...

SECOND OPINION

"A good-looking, playable and fun budget game. Great for the kids." RL

GREEN SCREEN

Loses a lot of its charm.

FIRST DAY TARGET SCORE

Reach the forest

The Verdict

GRAPHICS **70%**
□ Instantly recognisable.

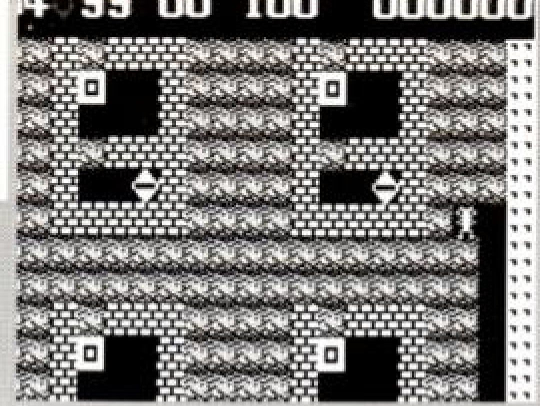
SONICS **48%**
■ No tune...
□ ...that's not always a bad thing.

GRAB FACTOR **66%**
□ Easy to control.

STAYING POWER ... **67%**
□ Six difficult levels.
■ They're all essentially the same.

AA RATING 68%

□ Smarter than the average game.



● Simple, but brilliant!

BOULDERDASH CONSTRUCTION KIT

Hi-Tec ● £2.99 cass
joystick/keys

Rockford has been a super-hero for years now. His first Amstrad appearance was covered in the very first issue of *AA*. Now he's back, via a budget re-release. But how does the mid-eighties hero fare in the big bad '90?

Those who have never seen any of the Boulderdash variants have missed a treat. The idea is a simple one, with the result being sizzling hot gameplay. You take control of Rockford, a diamond-hungry creature who wears a characteristic stripey T-shirt and blinks a lot. You guide him around an underground cavern where he digs away through the mud collecting diamonds on the way. But then it's not quite that simple, of course. The underground maze is littered with tons of rocks and populated by hordes of nasties.

Basically the game is all about solving puzzles. A certain number of diamonds need to be collected before a timer runs out, but the layout of the rocks, creatures and diamonds will challenge even the brainiest.

That's not to say the game is a plodding bore. You need lightning-fast reactions too. Many of the puzzles involve precise timing to solve them, and you'll need to be pretty nifty on the joystick if you're to stand any chance.

The screens are structured so that at first they seem impossible to do, but once you've worked out how to complete each one, it becomes fairly straightforward. Not so easy that you can relax, though – there's still enough to keep you on your toes. Every four levels there's a bonus screen where you can attempt to claim an extra life.

The screen designer unique to this latest release allows you to create your own custom levels. It's good fun devising complicated problems to test out on friends.

The game allows you to access any level you like – there are sixteen in all. Initially, this seems a good idea – if you get stuck in one cave you can try your luck at another. On the other hand, it may take the challenge out of some of those levels. **AW**

SECOND OPINION

"A genre that's as old as the hills, but it really is a classic." **RL**

GREEN SCREEN

Green rocks are just as hard, green diamonds just as valuable.

FIRST DAY TARGET SCORE

20,000 points

The Verdict

GRAPHICS **23%**
■ Well, it is an old game...

SONICS **19%**
■ Limited FX.

GRAB FACTOR **88%**
■ Looks well dated.
□ Instantly addictive.

STAYING POWER ... **87%**
■ Access to all levels allows you to see everything.
□ Once you've completed all the screens, design your own!

AA RATING **79%**

□ A gem!

WONDER BOY

The Hit Squad ● £2.99 cass
joystick/keys



Kitted out in nowt but a nappy, Wonder Boy must nevertheless brave the elements in search of his girlfriend, Tina. She has been captured by an evil king. As it happens, this king resides far away, and Wonder Boy will have to make his way through several perilous landscapes before he can attempt a rescue.

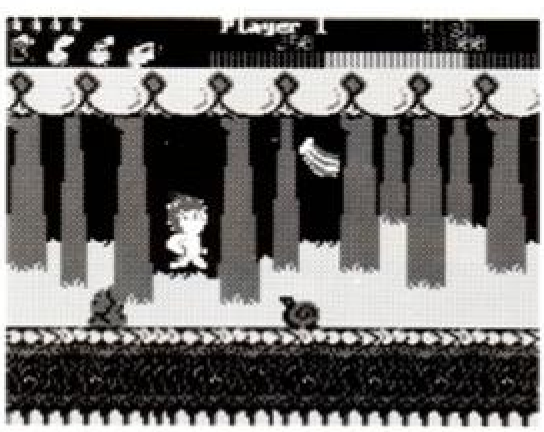
Wonder Boy is a cutie game that has been around for yonks – and it shows. The large cartoon graphics are a bit limited, backrounds get repetitive, and the sprites don't have too many frames of animation, so the action is by no means as smooth as it could be.

At first the poor lad is unarmed. Luckily, giant eggs can be cracked open to reveal all sorts of goodies. A throwing axe is particularly welcome, as there are baddies aplenty. Most can be jumped over, but the axe makes things a darn sight easier. Other things on offer are skateboards – complete with crash helmet – and protective fairies.

It's a horizontally-scrolling jumping game where you make your way from left to right across the screen. The game consists of seven lands to conquer. Each land is spilt into four territories and these territories are again made up of four zones. Getting killed towards the end of a level means that you don't have to start the whole thing again – you merely go back to the last zone, thank goodness.

The game has an incredibly tedious 'tune' consisting of just two chords alternated. The FX, however, aren't too bad, and luckily the music can be switched off.

Wonder Boy is quite good fun to play. The character reacts well to the controls, and there is plenty of game to get through. It's entertaining enough, but ultimately is limited by its repetitive nature. **AW**



● Stone-age entertainment – still works, though.

SECOND OPINION

"It looks incredibly dated, and that puts you off even though it's actually quite playable." **RL**

GREEN SCREEN

No harm done.

FIRST DAY TARGET SCORE

Reach the second land

The Verdict

GRAPHICS **56%**
□ Large, cute sprites.
■ Badly animated.

SONICS **37%**
□ Reasonable FX.
■ Naff tune.

GRAB FACTOR **64%**
□ Fairly easy to pick up.
■ Doesn't look terribly inspiring.

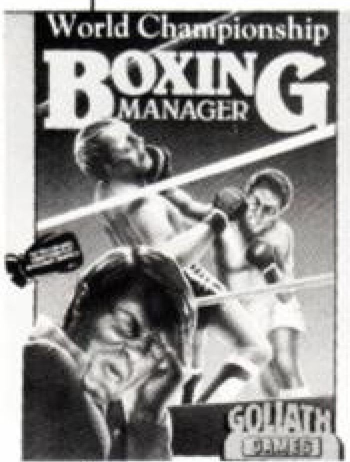
STAYING POWER ... **61%**
□ Large playing area.
■ Becomes monotonous.

AA RATING **62%**

□ A reasonably enjoyable little game.

WORLD CHAMPIONSHIP BOXING MANAGER

Goliath ● £9.99 cass, £14.99 disk joystick/keys



One punch can shake the world. James 'Buster' Douglas proved that by flooring a very rusty 'Iron' Mike Tyson. Well now *World Championship Boxing Manager* gives everybody the chance to become a Terry Lawless or Angelo Dundee, guiding a stable of heavyweight fighters towards fame, fortune or a serious kicking.

Using a 'quick flick' icon system, the game is run from an office containing all those essential items a successful manager needs. Files are in the cabinet with the dirt on every active boxer, lists of forthcoming bouts arrive by post, while a phone and filofax sit on your desk. Through the door is the physio and gym where your lads are patched up and trained.

Starting with up to four fighters at the tender age of 18, you must give them a chance to become a contender, pushing and shoving for the title 'Heavyweight Champeeeen of the World'. The choices centrally concern arranging and watching fights, whilst making sure everyone gets training and medical treatment between bouts. There's no money involved, give the other managers (all of which are trying for a title shot themselves) a decent share of the purse for a sensible match and it's fight time.

What makes manager sims so dull is the lack of action. Historically they've been all work and no play, with the manager getting a disjointed, second-hand account of a match and no influence over events. *WCBM* is different. With each fight over twelve rounds, you get a minute between each round to repair, refresh and re-define your fighter's tactics. If your boy's been taking a pasting then it's time to touch up the cuts and bruises with the swab and irons. If the opponent's fading you can cut you fighter loose and tell him to go for a KO.

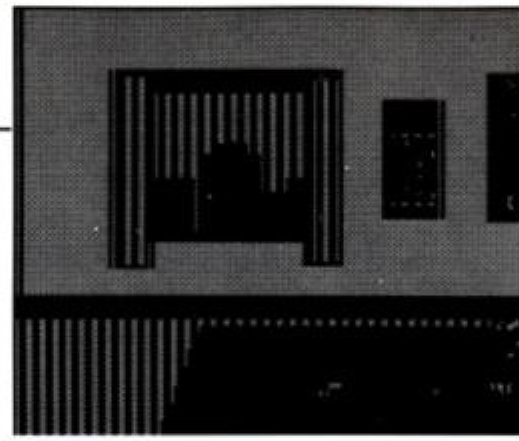
WCBM's fights are described in detail. The limit on the number of fighters in one stable keeps the game quick, while the lack of a money element is a positive knockout blow. Many good sims are ruined by throwing the player into a complex financial arena with no information about the true value/cost of personnel/prize money. Consequently, any would-be manager spends the first couple of years (if they last that long) making error after error learning the ropes. Not so with *WCBM* – here only the percentage of the purse is important, leaving the manager free to take care of those matters of minor interest, like winning!

The claims on the box of brilliant graphics are a tad overstated, but not wholly untrue. At least there's something other than text to look at. The bouts, with the boxer's face getting marked up during the fight, are good too. These touches take *WCBM* into a different league to your average, run of the mill, ho-hum everyday kind of management sim. It's fun, fast and mildly educational. If you follow the 'noble art' but are too sensible to climb in the ring, this could be the next best thing! Besides the more people who play the game, the more chance we have of ever getting a British Heavyweight Champ! TW

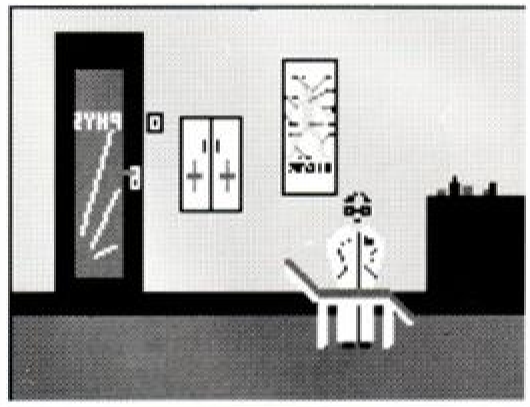
SECOND OPINION

"If you like using brains instead of brawn, fair enough. Otherwise, it's more fun in the ring." RL

GREEN SCREEN
No different.



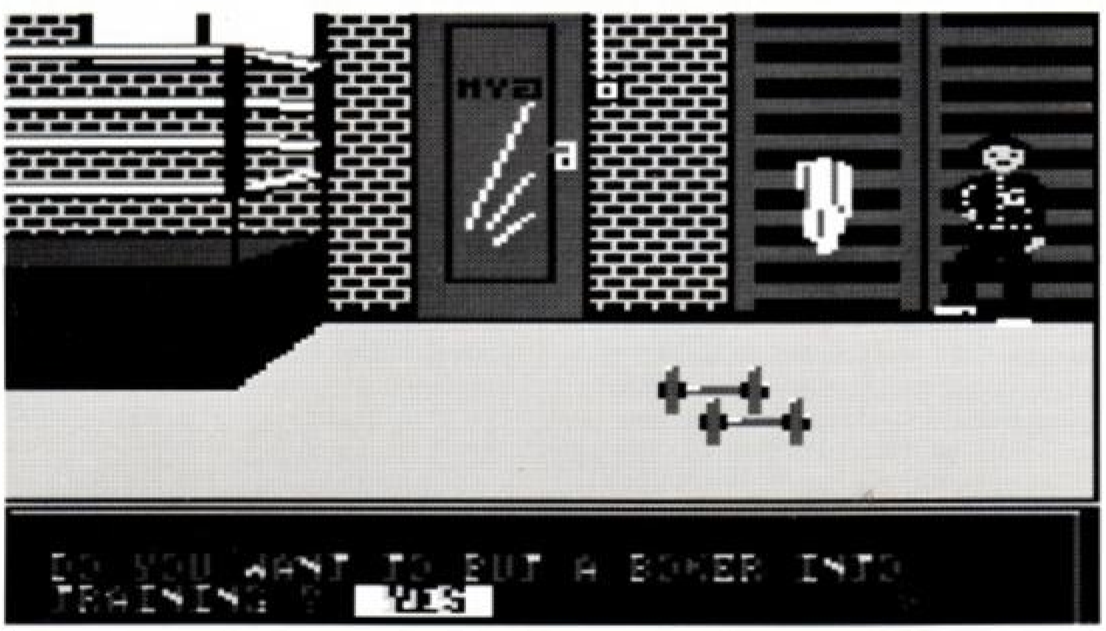
● Another day at the office for a boxing manager.



● The damage meter tells you how the fight is going.



● The damage meter tells you how the fight is going.



● Send your boxer to the gym for some specialist coaching.

FIRST DAY TARGET SCORE

Win the area championship

The Verdict

GRAPHICS **62%**
☐ Not stunning, but thorough.

SONICS **00%**
☐ Silence reigns.

GRAB FACTOR **66%**
■ Boxing fans only (well, mainly).

STAYING POWER ... **88%**
☐ Titles are hard to win...
☐ ...even harder to keep

AA RATING **71%**

☐ No Sugar Ray, but a solid pro.

THE RACE

Players ● £2.99 cass
joystick/keys

In days past, duels were settled with sword and pistol. Now such antiquated methods have been replaced by head-to-head challenges in the meanest, leanest supercars a person could wish to lay their driving gloves on. *The Race* is a straight charge into a world consisting of dead-end alleys, jumps, bumps and raised walkways.

SECOND OPINION

"Patchy, but has its high points. Only really worth playing in two-player mode." **RL**

GREEN SCREEN
The Race *is still on.*

The Race is at its best in two-player mode. On each side of the split screen sits a car, engine ticking over. As the countdown hits zero, then it's time to hit the turbo. The first race is into 'Future World', a *Xenon*-like place. The best route is shown by marker disks, and you'd better follow it or there'll be tears. The track is a maze of jumps and blind canyons of purple steel. Take the wrong route and a wall soon appears, a somewhat startling discovery at 200 mph!

There aren't to many sharp corners on the course, but some pretty nifty steering is required to avoid crash after crash into the small metal mountains. The loss of life is unimportant (!), it's the loss of time that's a killer. Each run must be completed within a set time limit, and as the levels progress they get more than a little tight.

Each race has a different theme. Level One is 'Future World', Level Two is 'Ancient World', which introduces dragons to the script, fire and all! The third world is the domain of the weird, and what a curious place it really is. Huge clown heads attack with a deadly "HA!", boxing gloves spring out of the walls crushing cars, while a manic *Pac Man* stalks every corridor.

The Race is little more than a vertically-scrolling car game, albeit one that's particularly good in two-player mode. What's so good about it is the variety of backgrounds. The first is dull, even tedious at times, the second a strenuous test of reflex speed while, three displays a dangerous lunacy that's truly wild. Who knows what the later levels hold?

The sprites are strong and well-defined, which makes their relative smallness forgivable. Imaginative design also helps lift the game above the level of the standard budget car romps, even though the sound effects do little to help.

The Race, quite simply, is a regular budget concept that's hit overdrive. **TW**

FIRST DAY TARGET SCORE
Reach weird world

The Verdict

GRAPHICS 79%
☐ Leaves most cheapies standing.

SONICS 01%
☐ Oh well, no-one's perfect.

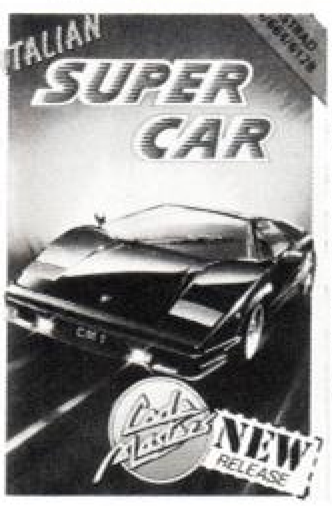
GRAB FACTOR 65%
☐ Great in two-player.
■ Dull first level.

STAYING POWER ... 77%
☐ The later worlds are really wild

AA RATING 72%
☐ Excellent budget car charge.

ITALIAN SUPERCAR

Codemasters ● £2.99 cass
joystick/keys



Super Stuntman (of Livewire fame) is back, and this time he's bought the car. In fact it's a souped up *Italian Supercar*. He's a film to finish and only a few takes left for each shot. The bits that the second unit have to get wrapped are all car chase scenes over various terrains, filled with landmines, bomb-tossing adversaries and many kinds of obstacles.

Each scene only lasts a few seconds and you, in the role of 'Stunty', have to finish the course within this limit. Crashes are limited to three. (Codemasters isn't made of cars, you know!) So it's a question of balancing the need for speed with the need for a motor in which to finish the film.

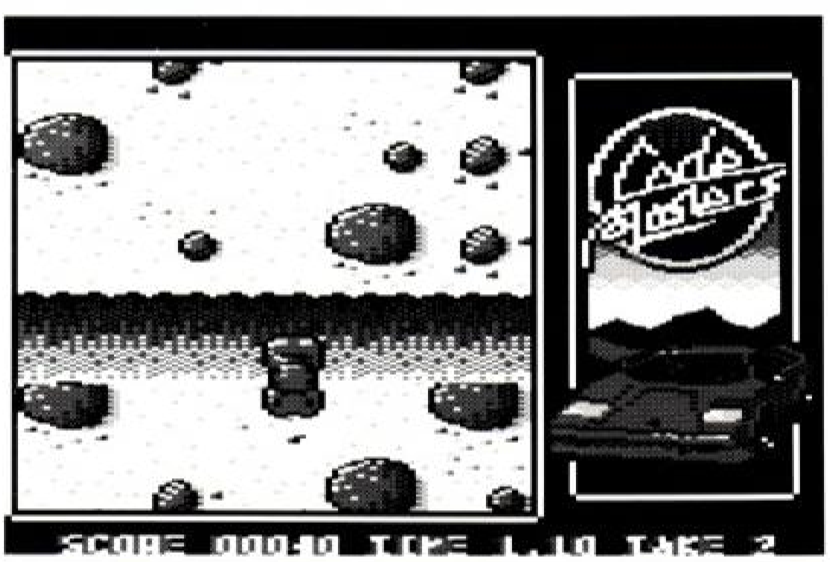
If this sounds familiar, that may be because it is. You only have to cast your mind back to last month to think of a game that looked and played exactly same – *US Turbo King*. There's nothing different; the gameplay is like that of *The Race*, but without the humour, originality or style.

SECOND OPINION

"Pretty well uplayable unless you persevere – if you bother." **RL**

GREEN SCREEN
No worse, no better.

The game works well enough – the sprites are solid, the game reasonably paced, and everything is easily controlled. But there's no reason to control anything. The game's more frustrating than it is fun, and there's little impetus to persevere. This is a stock budget that could have been produced any time in the last three years. Games need to evolve if they are to remain interesting, and this baby is straight out of the stone age! TW



● Standard budget seen-from-the-top driving fare.

FIRST DAY TARGET SCORE
Finish the first scene

The Verdict

GRAPHICS 55%
■ Efficient but dull.

SONICS 67%
☐ Decent theme music.

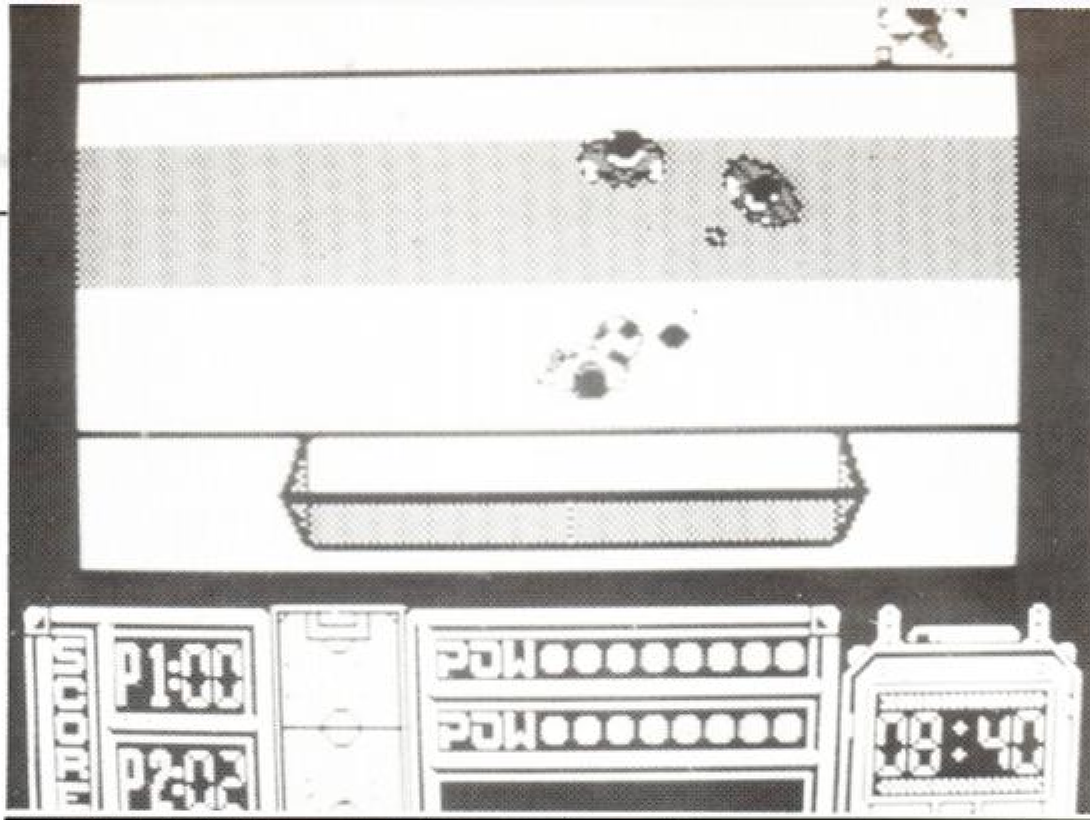
GRAB FACTOR 22%
■ Another 'over the top' car sim.

STAYING POWER ... 21%
■ Lacks life.

AA RATING 46%
☐ Very average budget job.

WORLD CUP COMPILATION

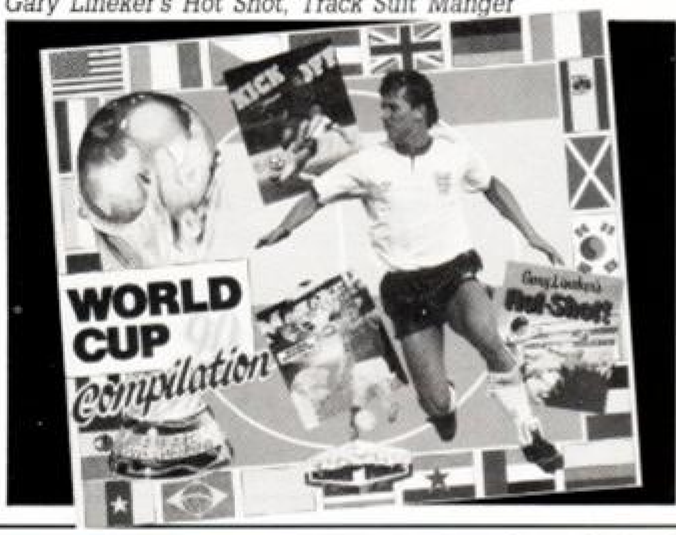
Empire ● £12.99 cass, £17.99 disk
joystick/keys



● *Gary Lineker's Hot Shot* – arguably the best game on the compilation.

With the World Cup being hyped as the "*most important sporting event in the history of the universe*" it's not surprising that the software bandwagon's already full. Empire, though, has surprised everyone with a superstar transfer to their squad. *World Cup Compilation* may win no prizes for originality in the title stakes, but it could well play a mean off-side trap against some of the original stuff this summer.

World Cup Comp brings together three classic footie games together in one box, *Gary Lineker's Hot Shot*, *Track Suit Manger*



and *Kick Off*. Yes, *Kick Off* still warm on the shelves as a full pricer, is here already as compilation fodder.

Empire, in a single stroke, has combined the strong, clear and pacey soccer graphics of *Gary Lineker's Hot Shot* (an *AA* Rave), the hectic chaos that is *Kick Off* and the rather slower-paced brain teaser *Track Suit Manager*. As a team, these boys complement each other perfectly and will provide a great challenge to anybody this summer. Let's just hope the competition itself can match the cut-throat pace set by the software strikers. **TW**

The Verdict

Gary Lineker's Hot-Shot	AA45	81% Rave
Kick Off	AA55	78%
Tracksuit Manager	Not Reviewed	

AA RATING 80%

□ A hardcore footie sim collection.

SPACE RIDER JET PACK CO.

Hi-Tec ● £2.99 cass
joystick/keys

If you're in the local Jobcentre looking for an exciting new career, then "tester for the Space Rider Jet Pack Co." may sound appealing. There's travel to the 23rd planet test site, adventure, glamour and the like. What they don't tell you, however, is the rather important



● Collecting jewels – *Boulderdash* in space?

fact that the aforementioned planet has been claimed by aliens – big nasty ones, with guns!

But if the idea of testing new kit in a war zone is your cup of rosie, then lead on Macduff and become a Space Rider. The mission that has been devised – by those who are nice and snug and safe back on Earth no doubt! – is one of mineral collection. You have to find the route across the planet, zapping bug guys and grabbing any gem stones (there are 99 in all) that happen to fall into your path.

The gravity (or lack of it) hinders control of the jet pack slightly, with first-timers rocketing upwards rather than floating. Life isn't all that

SECOND OPINION

***"Doesn't look too bad, but first impressions can be misleading..."* RL**

GREEN SCREEN
No trouble and Sons ltd. Co.

difficult, though, because the only other control to worry about is the gun, and you wouldn't be seen dead without that would you? (Well you might be seen dead, but doing little else!)?

So the whole game is just buzzing around blasting and grabbing – nowt that difficult and nowt that thrilling. The complex you end up invading is big, but is all much of a muchness, put together well enough but lacking pace and and any real sense of danger. All of a sudden you're dead, with "oh what a shame" more of an apt comment than the usual string of expletives used in gaming.

Graphically, the game is easy to look at with large (if unoriginal sprites) in strong basic colours. The gun sounds cute, but that's hardly enough to keep anyone riveted.

All in all, *Space Rider* mimics it's own story line and appears to be a test and not the real thing. If it were, you'd be more than concerned about the likelihood of death on a cold alien planet. But in *Space Rider* death's more of an inconvenience than an appointment with the big guy. **TW**

FIRST DAY TARGET SCORE

FIRST DAY TARGET SCORE

Get 10 crystals

The Verdict

GRAPHICS 55%
■ Very average platform graphics.

SONICS 22%
□ Nice shooting sounds.

GRAB FACTOR 67%
□ Easy opening stages make it playable.

STAYING POWER 44%
■ Nothing captures the imagination.

AA RATING 47%

□ Dull platform yomp.

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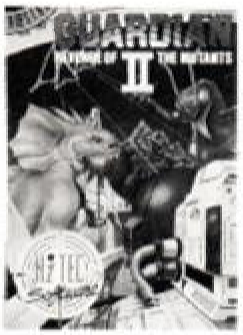
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GUARDIANS 2

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joystick/keys

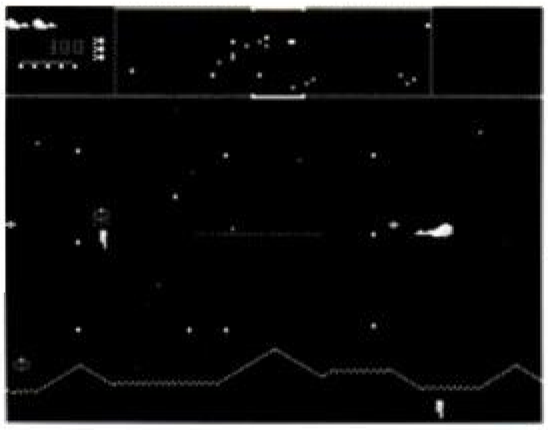


Aarrrggghh! – mutants are attacking the Earth again, after being fought back in *Guardian I*. These mutants carry Eathlings out of the atmosphere and then turn them into yet more mutants – which then attack you. Eeeek!

Guardian II is a actually a *Defender* clone. The enemy mutants attack in waves and you must destroy the whole wave while defending the people standing around on the ground.

There are a dozen Earthlings hanging around below you waiting to be kidnapped, and if you let them all get carted off then the Earth blows up with a feeble fizzle and a few beeps and buzzes. Mind you, having the Earth destroyed doesn't make much difference, seeing that you could fly straight through it anyway, but the number of attacking enemies does nearly double or even triple after the Big Bang.

The enemy is more mobile than your ship, which is fast enough, but about as manoevrable as a rampaging juggernaut. And the bad guys outnumber you about 50-1, so your chances don't look good. However... as well as your laser you have the ability to hyperspace and you have a smart bomb and cloaking shield to help you out too. These do not help much, though, because in the middle of air-to-air combat it is a little hard to hit H TAB or DEL with out taking your eyes off the screen...



● Remember this in the arcades?

In addition the sprites are tiny and it is almost impossibe to tell the difference between the enemy fire and the stars in the background. Scrolling is smooth and really fast – in fact, so fast that you can't see anything! Sound is limited to a few spot effects.

Guardian II is an outdated sequel to a *Defender* clone that looks positively prehistoric today. Nevertheless, the original game was great fun, and if you can ignore its antique origins, it's still well worth a play.

Jonathan Nurse

SECOND OPINION

"An absolute classic. The game is pretty basic by modern standards, but retains that magic indefinable element – utter playability." TW

GREEN SCREEN
No problem!

FIRST DAY TARGET SCORE

Destroy three waves

The Verdict

GRAPHICS 33%
□ Fast scrolling.
■ Small, outdated sprites.

SONICS 25%
■ A few spot effects.

GRAB FACTOR 70%
□ You get to kill things fast.
■ Too easy to die.

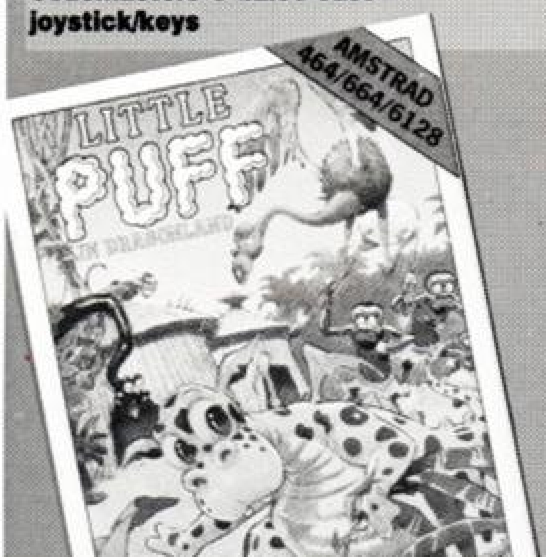
STAYING POWER ... 32%
■ All levels the same.

AA RATING 60%

■ If you really need a *Defender* clone, check out the PD librarys.

LITTLE PUFF

Codemasters ● £2.99 cass
joystick/keys



Little Puff's Mum told him not to wonder too far, but he wandered and wandered until he wandered out of Dragon Land altogether. Silly Puff. Little Puff has sense enough to come back again, but only to find his way was blocked by a mean guard who wanted a pass to allow him to continue (cute or what?). It's your job to help Puff the baby dragon find all four pieces of the pass so he can return to Dragon Land and his mum. At first you cannot even breath fire, not being an adult dragon, and so you have to find a special potion.

Life isn't easy for young Puff. He can't even fly (what, a dragon that can't fly?), and he still has problems after he has the magic fire-breathing potion. His inflammable exhalations have little effect against the local animals, and don't seem to be much use. The main problem with not being able to kill the little creepies you come across is the fact that even the smallest worm will kill – a major problem when you've only got one life.

This is the same sort of game as the egg-cellent *Dizzy* series (*oh no, not again! – ed*). You have to explore your surroundings, collect items and solve puzzles.The game should appeal to all *Dizzy* fans as it's very easy to play, and is ever so cute – and youngsters will love it.

The graphics are nothing to go mad about. They are drawn well but are obviously a straight Speccy port. Sound is very limited, with just a few good in-game spot effects and a short tune on the title page.

Some puzzles are very easy, but others at first seem downright impossible. But all the puzzles are well thought-out and should be solvable eventually.

Jonathan Nurse

SECOND OPINION

"Dizzy all over again, but without the originality. Good fun for kids, but tedious for the older games player." TW

GREEN SCREEN

FIRST DAY TARGET SCORE

Get 2,200 points

The Verdict

GRAPHICS 68%
■ Speccy port.
□ Well-drawn graphics.

SONICS 45%
■ Only a few good spot effects.
□ OK title tune.

GRAB FACTOR 89%
□ Easy to start.

STAYING POWER 79%
□ Some hard puzzles.
■ And some that are too easy.

AA RATING 73%

□ *Treasure Island Little Puff?*

WORLD CUP SOCCER: ITALIA '90

producer ● £9.99 cass, £14.99 disk joystick/keys

Have you been looking forward to the summer months so at last you can turn on the TV and not see FOOTBALL? Tough, 'cause it's World Cup time again.

This sporting event is about to hit both TV and computer screens the world over, and the first team to try for a winner's medal – on micros, at least – is Virgin's *World Cup Soccer: Italia '90*.

The Branson bunch has been rather crafty and united two licences for its Italian footie frolic. First it secured the rights to the arcade title and then scooped the rights to the World Cup itself. With the teams ready for action, Virgin has hit the turf running with the first game on the scene.

As an arcade, *WCS-I'90* (catchy, innit?) stresses one thing above all others – playability. On the coin-op you'd have been pretty miffed if your 50p was swallowed up by some team selection procedure you didn't even want to understand. So, true to the original the Virgin squad rushes straight out onto the pitch, line up and is ready to play before you can say "over the moon Jim".

The whole game is viewed as if you were sitting in the top row of the stands behind your own goal. This blends a good tactical view for passing and tackling, while letting you see the players in their full purple glory. Which is spiffing, because they're the best looking and fastest footie graphics yet! Yes, even better than *Kick Off* (*shurely shome mishtake? – ed*).

Now football is reputedly a game of two halves, but it is also whispered to involve 22 players. Think again, pal, this is an arcade conversion. There's only one half and 14 men, and it's just as well. If the game was any bigger the RSPCJ (Royal Society for the Prevention of Cruelty to Joysticks) would be round, because it's hectic game, that strains 'sticks and fire buttons to the limit.

The first matches deal with qualification for Italy, while the rest of the game's about going out there and winning the trophy! No points for originality, but bundles for a clear and simple game design. To qualify, you have to win three matches on the trot, then once in Italia, you've got to keep on winning until you hoist the cup above your head or are defeated and head home with your tail between your legs.

Playing couldn't be easier. After picking a country, the game begins. You play up-field, and the man currently under your control carries a large white arrow on his head (bit of a giveaway, really) and he can run and kick in eight directions. There's no attempt at a kick'o'meter or anything fancy. When you press the fire button, the guy either kicks the ball or tackles, which ostensibly, is all you need.

What's so different about *WCS-I'90*, then? The goals, that what! As soon as a striker gets free with the ball inside the 18-yard box, the whole perspective switches. From high above, the view cuts to behind the player and facing the goal. If attacking, you get to move the player, if defending you move the keeper. It's a waiting game, as both striker and goalie dart from side to side until the striker feels he's got a chance. Then squeeze the fire button for a shot. The goalie can dive but, if the shot's well-timed, he doesn't really stand a chance. So it's time for a trot back to the centre circle or a snog with your mid-field general (whatever takes your fancy).

These goalmouth sequences don't break up the game as they did in *Gazza*, they actually add to the drama. Going for goal takes on the menacing air of a gunfight as the two players vie for position. Naturally, you can't stay in front of the goal bobbing and weaving all night, though – speed is of the essence. Take too long lining up your shot and one of the defenders will jog you back into overhead reality by nicking the ball.

The two past masters of CPC soccer were *Emlyn Hughes* and *Kick Off*. *Emlyn* looks better than *WCS-I'90* but can't live up to its pace. *Kick Off*, on the other hand, has great gameplay but is a graphic catastrophe. *WCS-I'90* nearly matches it for ball skills and floors it with crisp, realistic sprites. What's more, neither has *WCS-I'90*'s goal section. The game may be slightly shallow, with only one tournament to play in and limited two-player mode. Importantly, though, it's fun and easy to play, if not win. It'll be enough to keep any diehard football fan, who's also a desktop John Barnes, torn between TV and monitor this June.

TW

AA RAVE! ☆ AA RAVE! ☆ AA RAVE! ☆ AA RAVE! RAVE!

SECOND OPINION

"Nice to see that this year's Official World Cup game has had so much effort put in. Looks good, plays good, and is great fun with two players. Well done Virgin.' AW

GREEN SCREEN

The green, green grass of Rome is no problem.

FIRST DAY TARGET SCORE

Qualify for the finals

The Verdict

GRAPHICS 82%
- These boys run so well!
- Brilliant goalmouth sequences.

SONICS 01%
- There's a whistle...
- ...and, um, another whistle!

GRAB FACTOR 81%
- Arcade quality.
- Easy to play, tough to beat.

STAYING POWER 66%
- Just the one route to the finals.
- A very hard tourney' to win.

AA RATING 81%

- The World Cup starts here!



● The action's immediate in *World Cup Soccer - Italia '90*, with its great control, goals, throw-ins and fouls.



Eyes down for action in the new all colour Eagle
32 thrill-filled pages for Eagle eyes only. Out now. 45p.

ACTION TEST

SONIC BOOM

Activision ● £9.99 cass, £14.99 disk joystick/keys



● Blow the oil terminals up, just because it's pretty.



● Destroy the oil drums to weaken the end bad guy.



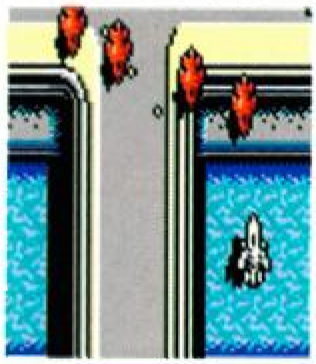
Those terrorist chaps are at it again – which is great news, actually. Now there's an excuse to hop into the world's 'ardest jet fighter – the Sonic Boom – and blow the living daylights out of large parts of the civillised world.

As with the arcade, *Sonic Boom* gives the 'top guns' of this world a chance to scroll up-screen shooting and bombing anything in their way. That's it, just another plane game, featuring smart bombs and ghost fighters that sit on your wings.



That, however, doesn't do the game justice. It's fast enough to make life difficult, but has a sufficiently generous credit feature to permit success. There are well 'ard end-of-level guardians, and loads of things to destroy en route to them – the oil terminals on Level Two are personal faves.

The graphics are colourful, the sound more than OK. If vertical scrollers are your thing then there's enough levels to keep fingers on the trigger for weeks. Yet there's nothing about it that screams "Play Me!", the same format having been employed in so many games before (*Flying Shark*, for example). *Sonic Boom* is, in essence, a solid conversion of a lacklustre arcade. A shame, as the talent is obviously there but remains untapped. **TW**



SECOND OPINION

"Nice and colourful, but the bullets can sometimes be hard to see. A wee bit tame and predictable for my taste." RL

GREEN SCREEN

Some bullets are invisible.

FIRST DAY TARGET SCORE

Finish Level Two

The Verdict

GRAPHICS **73%**

□ Above average quality for very average sprites.

SONICS **55%**

□ Lots of bangs, and a bit of music.

GRAB FACTOR **81%**

□ Very familiar, so quickly mastered.

STAYING POWER **55%**

■ Just another scrolling shoot-out.

AA RATING 61%

□ Lacks inspiration

NINJA SPIRIT

Activision ● £9.99 cass, £14.99 disk joystick/keys

Ninjas and computer games go together like love and marriage – take away the soppy bits and the fighting's very similar. The black pyjama boys have had some of their greatest moments jumping and slaying on arcade screens across the country. No one did it better than *Ninja Spirit*. In the coin-op you could use four authentic weapons to splat, spear and slice foes with, while the bad guys used every trick in the book to try and do you down. To help see off this threat, the ninja warriors' ancient ancestors would come back to lend a hand in the scrap.

Could this visually stunning arcade be mimicked on the CPC? Well, it's not an exact replica, but the spirit (groan!) lives on. Seven levels of top-notch killing is the outcome, with a game that looks nothing like the arcade but plays well regardless.

The plan is simple. Stalk and slash your way through multiple horizontally-scrolling landscapes, with swords, shuriken, rice scythes and lassoon ropes. Dead enemies occasionally leave the curiously-named Ninja Balls behind (*that's enough tittering – ed*), which can be collected for power-ups. These include three-way firing death stars and ghost ninjas which mirror your every move, including firing, and don't disappear until you kick the bucket – so one life can last a mighty long time.



● Above: The Level One guardian.
● Below: Two ninjas make life real easy.



The evil ones spring from everywhere, but with the amount of fire-power you can lay out they're more of an inconvenience than a danger. Only the massive end-of-level guardians are really tough.

The good news on the graphics front is that rather than take the Speccy port road they've used masses of colour, the bad news is the sprites sometimes merge into the background. Still, the simplicity factor helps you feel superior, which makes a nice change – the coin-op was a real toughie. **TW**

SECOND OPINION

"The graphics are rather messy on the lower levels, though the sprites are good. A bit too easy, though – each games lasts absolutely ages." RL

GREEN SCREEN

Level One's real hard going.

FIRST DAY TARGET SCORE

Reach Level Four

The Verdict

GRAPHICS **70%**

■ Bright and colourful...

■ ...too bright in places.

SONICS **47%**

■ Music throughout the game.

GRAB FACTOR **57%**

■ Easy game, ruined by over-ambitious graphics.

STAYING POWER **55%**

■ You'll finish it real fast.

AA RATING 66%

■ Fun, but easy arcade bash.



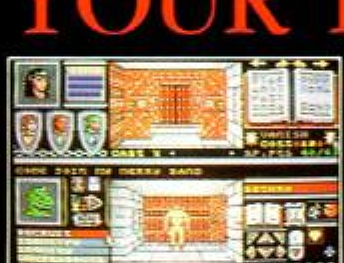
ARGUE! BARTER! LIE THROUGH YOUR TEETH!!!

As the people of the Bloodwych awake to a new dawn, they find a stranger in their midst – from one of many races he has come. His task; to halt the demon that lies dormant within the Castle of the Bloodwych.

Unification of the Crystals of Sanguis will secure the Behemoth in his lair for all eternity. Should they remain separate, then he shall rise to bring darkness into the world.

This unique role-playing fantasy game allows greater interaction with the environment than has ever been seen before. Argue, barter, negotiate – even lie through your teeth! The fully implemented personalities of all the characters in Bloodwych allows a rich style of role-playing that has only been dreamt of.

With one or two player simultaneous mode, this is the game that you've been waiting for. Bloodwych for those that dare!





Atari ST Screen Shots

Amiga	£24.99
Atari ST	£24.99
Spectrum (tape)	£9.99
Spectrum (disc)	£14.99
Amstrad CPC (tape)	£9.99
Amstrad CPC (disc)	£14.99
Commodore 64 (tape)	£9.99
Commodore 64 (disc)	£12.99

iMAGE works

BALROG

The Balg's back with another sackful of hints, tips and adventuring lore.

The hairy one yet again leaves his dark, dank cave in the depths of Moria to bring you another tale from the wonderful worlds of adventuredom...

Clue Sniffing with the Balrog

An *Interceptor* special in this month's *Clue Pot*, as the Balg gives tips on every single *Interceptor* game. The intrepid adventurers who contributed to this month's *Clue Pot* were C Rivers, Joan Pancott, Stuart Whyte, Claire Smith, Nigel Arnott, P Chamley, The Balrog, Graham Wheeler, Mandy Rodrigues, Angela Allum, Debby Howard, Wendy Watters, and Simon Netherwood.

After Shock

- Carry TV or radio to get past looters; drop both to get past soldiers.
- In old house, support stairs with beam before climbing them – beam on waste ground.
- Red Herrings – pen, desk, tissues, pickaxe, diamond, stick, cap, trumpet, ticket, sweets and rusty nail.

Bards Tale (especially for Philip Martin)

- The statue of the Mad God is in the castle, top level, location 1 north, 21 east. But you'll need the eye to get further...
- Attack the samurai statue – it is the easiest of the guardians to kill and is worth a lot of experience.

Bugsy (especially for Mark Moore)

- Go to the gunsmith, talk to him and then buy the gun. Then go straight to the post office and rob it.

Forest at the World's End

- An elf and flying lizard appear at various stages in the game – use the bow to kill them. Sometimes you miss and get killed, so make sure you save the game frequently.
- Kill the spider in the wooded vale with the bow.
- Put log over chasm to cross it.
- Blow the horn on the brink of the precipice. A dragon will appear and carry you down to the bottom of the cliff.
- At the volcano tie the rope to the rock and then climb down rope.

Heroes of Karn

Serpent	Beren, kill serpent with bird
Hydra	Use the spear
Bear	Use the honey to put him to sleep
Balrog	Play the flute

- Get Istar to read scroll
- To free Istar, play flute
- In the hall of infinity type:

'TAKE GOLD KEY, DROP GOLD KEY, TAKE GOLD KEY, EAST'

- Oil the chest before opening it
- Beren can catch the bird with the wicker cage.
- The bottle carries all liquids
- Kiss the frog in the dead marshes
- Finally, use the crowbar to open the clam.

Jewels of Babylon

- Shout, and the boulder will crush the crab, then shoot the pirates. Throw fish to lion.

Lancelot (especially for Robert Cross)

- Ignore the sieging army and go into the inner chapel at Tintagel.

Message from Andromeda (especially for Sammy-Jo D'Angelo)

- Rotate the sphere and get it. Go to the blue room and drop the sphere on the pedestal and then rotate the sphere.
- To kill slug, wear gloves, get fungus, throw fungus at slug. Kill alien commander with space axe to get key for computer. Kill creature – examine skeleton, cut ropes, get stones, throw stones at creature.

Warlord

- Get the helmet by going to the pool on the beach, jump in water, E, N, climb out. Wear it to pass the warrior on the causeway.
- Sleep at the lake to get the sword.
- When "The Roman suddenly appears and he attacks you", attack Roman. He then runs away and makes camp near the start (try Woodland Path, Vale of Rhia or Wooded Vale) and you must have the rope to capture Roman. To find the staff and cloak, go to the Inner Courtyard and jump on straw. To get back, lean ladder against platform.

Rigels Revenge

Debby Howard, Simon Netherwood, Graham Wheeler and P Chamley all came to the aid of Daniel Tish:

- Go to suburbia (you must have the stun gun), go east 'till you find a screwdriver, get screwdriver, put screwdriver in satchel, remove goggles, get rubble, E, throw rubble at security light, wear goggles, go east and you will find the uniform on the porch outside the bungalow. But only take the rigelian uniform.

Mindfighter

Simon Netherwood wrote to help Alec Chapman with his difficulty:

- Don't open the envelope. Turn on the kettle, steam envelope over kettle, examine envelope. Now go to the lounge, turn on TV, on Friday night a newsflash will occur...

NEWS... NEWS... NEWS...

● **Good news for those people who haven't sent off for their copy of *The Island* from Ken Bond yet** – Ken is now giving away a second game on the B-side of the disk absolutely free as well! *The Base* is just as good as *The Island* (if not better) and this makes it an essential disk in any adventure player's collection.

Ken has also released a new game called *The Test* – the Balrog has been given a sneak preview and it looks to be of just as high a quality as Ken's previous games. *The Test* costs £4.50 and is available on disk only. For more information, write to Ken at **17 Adel Park Gardens, Adel, Leeds LS16 8BN** or telephone him on (0532) 672278.

● ***Last Days of Doom* from Topologika is now available.** This final part of the *Doom* trilogy (*Countdown to Doom* and *Return to Doom* being the others) boasts over 150K of text and around 218 'rooms'. Accompanied by your trusty robot dog (who's as much of a nuisance and a help as before), you'll have to deal with squashed spaceships, renegade robots, slow beings (?!), a ruined city – in fact a host of original Killworth puzzles – in your quest to save Doom. Yes, in the final instalment of the *Doom Trilogy*, the planet is doomed, and your mission is to save it!

For more information, contact Topologika at **PO Box 39, Stilton, Peterborough, PE7 3RL**, telephone 0733 244682. *Last Days of Doom* costs £19.95 plus 50p p&p.

● ***ADLAN*, the ROM adventure creator from Graduate Software, has finally been released,** and the Balrog hopes to review it for next issue. More details can be obtained from Graduate at **14 Forrester Avenue, Weston- on-Trent, Derby DE7 2HX**.

BALROG

HELP!

Can you help these adventurers in distress? If so, write to the Balrog and save their lives!

- Dean Sweet is stuck in ***Knightmare***: "I can get past the door on the first screen, but it's the second screen I am stuck on. Please could someone tell me what to do."

- Christopher Clark is also stuck in ***Knightmare***: "I have found the potion, scroll, plenty of gold, the maid (useless) but I can't find the Dragon – could somebody please tell me where it is!"

- Peter Templeton from Ipswich is stuck in the ***Hobbit***: "I have got the map, golden key, large key, rope, sword, lunch and some more food. I have been caught and put in the elvenking's hall. In the hall I have found a magic door... I am now stuck – please could someone help me!"

- James Burr is stumped in ***Jinxter***: He is unable to saddle the unicorn as the saddle won't stay on the cloud and he can't use anything else instead of it. Can anyone help him?

JUST FOR LAUGHS

The rib-tickling responses this month are brought to you thanks to Antcrusher, Mark Berbezier, Simon Netherwood, the Grue & Jonathon Burton.

Big Sleaze
- Try leaving the office door unlocked, driving away then returning
- Reading the dynamite
- Do as the dame asks in part 3

Seastalker
- Try arresting anything

Ship of Doom
Try swearing

Sorceror
Try casting Yomin on various NPC's and items
Drinking the Indigo (Flaxo) potion

BARD'S TALE CLUB

Adrian Forbes is a true Bardist – he has sent many interesting programs and tips to the club. Here is a useful mapping program for printer owners:-

```
1 ' Bard's Tale Map maker
2 ' Public Domain by Adrian Forbes
10 PRINT#8,CHR$(27)+"@"
20 CLS
30 INPUT"(N)LQ or (D)raft :",a$
40 IF UPPER$(a$)="N" THEN PRINT#8,CHR$(27)+"x1":GOTO 70
50 IF UPPER$(a$)="D" THEN PRINT#8,CHR$(27)+"x0":GOTO 70
60 GOTO 30
70 INPUT "Title :",t$
80 ' Title is the name of the level such as Castle 4
90 PRINT#8,CHR$(27)+"W1"+CHR$(27)+"G"+CHR$(27)+"4"
100 PRINT#8,"  "+CHR$(27)+"-1";t$
110 PRINT#8,CHR$(27)+"-0"+CHR$(27)+"H"+CHR$(27)+"5"
120 FOR a=1 TO 23
130 PRINT#8,STRING$(23,".")
140 NEXT
150 PRINT#8,CHR$(27)+"W0"
160 PRINT#8:PRINT#8
170 PRINT#8,CHR$(27)+"-1Key"+CHR$(27)+"-0"
180 PRINT#8
190 PRINT#8," - Wall"
200 PRINT#8," - Door"
210 PRINT#8," - Trap"
220 PRINT#8," - Spell negation zone"
230 PRINT#8," - Darkness"
240 PRINT#8," - Teleport from"
250 PRINT#8," - Teleport to"
260 PRINT#8," - Stairs up"
270 PRINT#8," - Stairs down"
280 PRINT#8," - Portal up"
290 PRINT#8," - Portal down"
300 RUN
```

Each map in the game is drawn on a 22 x 22 grid, and this program draws a grid of 23 dots x 23 dots, so take each dot as the corner of a box. Write the numbers 0-22 along the sides of the square. Before you enter a maze, cast Magic Compass and Scry Sight and find on the grid the relevant co-ordinates. Then just fill in the map as you go along.

Adrian also has a question. What is the high-pitched *beep* he sometimes gets when he leaves a building, and what is the hissing sound he gets when leaving buildings?

Adrian has also compiled a list of areas in the dungeons with masses of monsters just waiting to be killed. These places can give your team of adventurers much gold and experience but, be warned, some of these fights could cost you your life...

In catacombs 1:

12,3	66 Skeletons
2,19	52 Skeletons (in the dark)
9,18	28 Zombies
10,20	45 Zombies
16,6	11 Wights

Catacombs 2:

11,6	49 Wights

Castle 3

5,12	Loadsa experience (but be prepared for the combat to take half an hour!)

37 Victoria Road, Gourock, Scotland PA19 1DF.

Brian Thornton has just completed the *Bards Tale*, so if anyone wants some help, write or phone (Monday-Friday 8am – 4pm).
130 Bulloch Crescent, Denny, Stirlingshire FK6 5AN. Tel 0324 823555.

Lords & Ladies of Adventure

Graham Wheeler has written complaining about a couple of letters he has received from some readers, notably Paul Daykin and Mark Cassell. Both of these people asked Graham for complete solutions to over five games which is a lot of paperwork and photocopying for Graham. "Please do not ask for full solutions", cries Graham, and the Balrog wholeheartedly agrees. When writing to a Lord or Lady of Adventure, remember to tell them exactly where you are stuck in the game and what your problem is. The Lords/Ladies ask no money for their services – so treat them with the respect they deserve! Don't forget to also enclose a stamped self-addressed envelope so the Lord/Lady can reply to you.

Base • Hollywood Hijinx • Infidel • Island • Test • Wishbringer • Help for PAW programmers.
Ken Bond, 17 Adel Park Gardens, Adel, Leeds, West Yorkshire LS16 8BN. Tel (0532) 672278.

Colossal Adventure • Heroes of Karn • Message from Andromeda.
Stuart Mason, Flat E3/3.5, Lupton Flats, Alma Road Leeds 6.

Cricket Crazy • Life Term • Smashed • Mindshadow.
Paul Daykin, 93 Hummersknott Avenue, Darlington, Co. Durham DL3 8RR.

Adventure Quest • Dungeon Adventure • Gnome Ranger • Kobyashi Naru • Jewels of Babylon • Lancelot • Lords of Time • Mystery Indus Valley • Price of Magick • Redmoon • Return to Eden • Shadows of Mordor • Snowball • Souls of Darkon • Venom.
Wendy Watters, 82 Booth Road, Stacksteads, Bacup, Lancashire, OL13 OSF. Tel: (0706) 877518.

Classic Adventure • Fantasia Diamond • Hobbit • Hollywood Hijinx • Inca Curse • Invincible Island • Mountains of Ket • Planet of Death • Sorceror.
Dave Havard, 21 Belvoir Close, Fareham, Hants, PO16 OPJ.

Forest at the Worlds End
James Mackle, 45 Kenure Park, Rush, Co Dublin, Ireland.

THE CLUEPOT INDEX

All those ardent clue-potters still struggling with their favourite games need struggle no longer! Here is the complete list of *AA* 'potted games, together with the issue number the help appeared in...

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BALROG'S POST

● *Hitchhikers* on tape?

"...Please could you tell me where I can obtain *Hitchhikers Guide to the Galaxy* on tape?"

Chris Locke
Chelmsford

Sorry to disappoint you, Chris, but all of the Infocom games, such as Hitchhikers *and* Suspect, *are disk only, as the programs are too large to fit into memory in one go and so have to be loaded in parts of the disk. Sorry!*

● Games tested...

"...I noticed recently that one of your readers was asking advice on getting his games playtested. I would like to say that I would be very willing to help anyone by testing a game for them. I have tested games before, for people such as Sandra Sharkey and Pat Winstanly, so I am not without a certain amount of experience..."

Graham Wheeler
Bath

Well done on volunteering yourself, Graham. I hope you know what you are letting yourself in for! So, if you have just finished writing an adventure, then why not send it to someone like Graham first before sending it to Amstrad Action *– Graham can evaluate the game for you and tell you its weaknesses and good points. To be honest, I receive a lot of poor home brew games that have bad spelling, bugs, skimpy text and bad parsers which obviously have not been playtested enough (if at all!). Graham can tell you whether it is worth sending the game to me – thus making my life easier! One final point is that it is worthwhile sending your finished games not only to AA but to fanzines (such as those mentioned recently) for a review – this will give you a wider coverage. If you would like your game playtested then write to Graham at* ***2 Burford Close, Southdown, Bath, Avon BA2 1JF*** *or telephone him between 10am and midnight on 0225 426919.*

● Island praise

"...With regard to your column in *AA*53, I sent a disc to Ken Bond for the game *Island*. I would like to highlight the fact that Ken not only produced a very good game but returned my disc within 36 hours..."

J Graham
Dingwall

"...I read your review of *The Island* and I thought 'I must have that' so I wrote to Ken Bond. I got two adventures by return of post and they are brill!!! It is the best value for two stamps I have ever had..."

Dave Peters
Ealing

Just a couple of the comments I have received about Ken's disk. Well done, Ken, you are obviously attracting quite a group of fans! Bond fans read this month's news – Ken has a license to quill! (I had to say that sometime!)

CONTACTING THE BALROG

As always, the Balrog is interested in all matters adventurial, so write to The Balrog c/o *Amstrad Action*, and your letters will be sent by orc to the Balrog's Lair. All letters are read and your points, although not always printed, are always noted.

TURRICAN

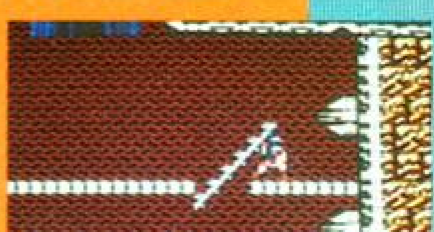
Rainbow Arts ● £9.99 cass, £14.99 disk joystick/keys

Night chills are plaguing the world of man. Striking at the dead of night, they seize the heart, paralyse the brain and freeze the blood. Our entire species is in the grip of a collective nightmare. Morgul the lord of darkness and true fear has returned. The ancients thought they had banished this abomination to the endless tracts of time. They were wrong. Now all mankind is in the gravest peril.

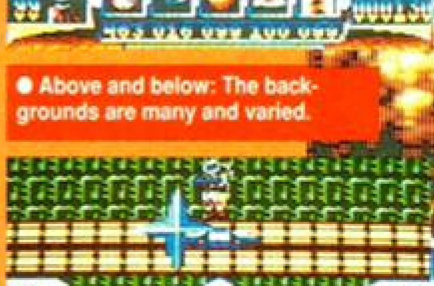


The ancient ones had heroes to defend them, of course. But then so too does modern man – his name is Turrican. He has the courage, the will and the firepower to destroy Morgul. And you can take him into battle in the latest arcade-style epic from Rainbow Arts.

As with all decently evil demi-gods, Morgul has holed up in a seemingly impenetrable fortress – but he must be killed if the terror is to cease. To reach this hideaway, Turrican must battle through five worlds, each crammed with its own special horrors. Armed lightly at the begining, the steel-suited crusader must find sustenance and greater weapons during the battle.



● Above and below: The backgrounds are many and varied.



The first fight takes place in a desert land and the caverns below. While leaping and bounding between the platforms, even the mighty Turrican ('Turri' to his friends) has to be amazed at the sheer size of the place. There's a correct route, but the shiny slayer has a choice and is not led along a single path. So Turrican not only has to fend off the forces of darkness and collect the 'power up' crystals, but find his way about too! No complaints from the lad, though, he just gets stuck in. After all, the more ground there is to cover, the more things/people/monsters there are to blow into small, smouldering pieces.



● Sometimes you just have to jump blindly. Only this time, it's straight into a waterfall...

The sheer variety of foes is daunting. Level One's is the totally evil hammerfist creature. It's a huge gauntlet that tries to pound Turrican into the ground, and all he can do is shoot back. Later levels have even more joys to discover, all of which grow in nastiness proportional to the level number. If there's a giant piranha on level three, then what on earth awaits any player lucky (unlucky?) enough to make it to the industrial world where Morgul himself is shacked up?

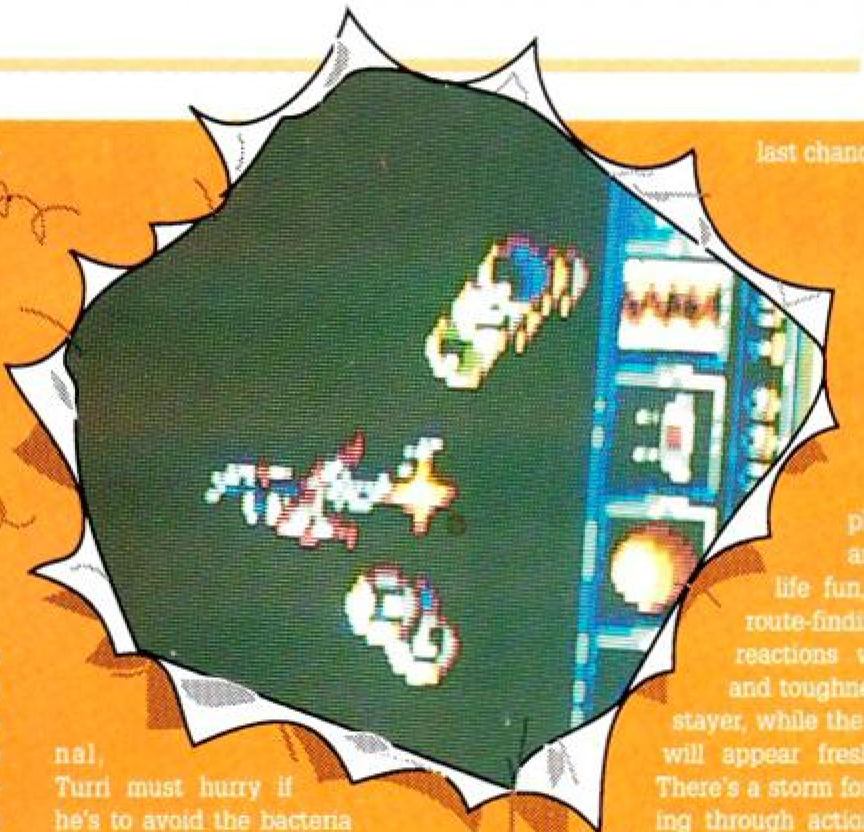
Of course, just as there's more than one way to skin a cat (*big knife, scalpel, dead, alive etc – ed*), there's more than one way to shoot back. Turrican, like all good heroes, can make super-weapons out of the bodies of his enemies. Some leave jewels behind, and each colour



● The deadly hammerfist on Level One – give it a chance and it'll pound you into the ground.

has a different effect. Green jewels, for example, switch Turri from his normal three-shot rifle to a pulse laser. If more greens are bagged, the jewels increase both the range and pokeiness of the blast. The best shooter by far, though, is the boy's laser whip. Pressing fire with the joystick centred sends Turrican into a crouch. Out of the barrel of his gun, a solid beam of white-hot laser death leaps. What's more, this beam can be swept in an arc killing all it contacts.

The laser whip comes in handy on the later stages not only to help waste a few more of Morgul's nightmare beasts, but in locating the right route. Blocks commonly have to be blasted out of the wall to create a corridor, and a sweep with the laser whip soon shows up the solid from the fake – although not all hidden corridors lead in the right direction.



Turrican's true glory, though, is not won on the field of battle – he can hold his own with anyone there – but in the scale and stunning nature of the worlds he fights on. The creatures themselves are monstrous creations that range from cute red bats to huge, hero-eating fish, from the lowliest amoeba to leaping skulls on springs. Remember, Morgul is the Lord of Fear and Darkness, so any kind of horrific creature is likely to spring out at any time.

The worst nightmare encountered in pursuit of war, injustice and the Turrican way, is World Three. You've heard of Disneyland, well this is Geigerland, a monstrous theme park of pain. Just like the hive of Geiger's Alien (the eponymous monster that's forever fighting Sigourney Weaver), World Three is a mass of crystalline webs and bones. Set on the diagonal, Turri must hurry if he's to avoid the bacteria that doubles in size everytime it's touched. This is a history-making nastie, because if you get it wrong it's past tense time.

Turrican is not just a platform leap-about. There are stages where the boy dons his jet pack and flies upwards through huge girders, continually hassled by vast creatures. These levels are the hardest of all, simply because once Turri' starts to scroll up there ain't no stopping him. There's nowhere to run and nowhere to hide, he just hangs in the air, an inviting target for any passing nightmare to shoot at. To make matters worse, he doesn't even get his laser whip, as there's nowhere for him to stand!

The final twist to the game lies in the time limits allowed for each section of a world. More than generous to begin with, they soon take on Scrooge-like characteristics, giving the would-be hero mere nanoseconds (seems like it, anyway) to kill twenty beasts and clear three sections of a world. Don't you just love a challenge?

Turrican contains those wonderful moments, sadly absent in most games, where having successfully conquered an area you literally have to leap into the unknown. Set on platforms there are many occassions where Turri' has to leap out into space totally ignorant of what lies below. Most of the time it's safe, and there's only monsters waiting! On others occasions, though, there are waterfalls or gaping chasms that swallow up mankind's last chance in a very fatal fashion.

For adventurous, blasting fun it's hard to think of anything better than *Turrican*. It combines the elements of an arcade adventure brilliantly with the pace and power of a full-blooded platform shoot-out. The array of weaponry makes life fun, while the challenge of route-finding makes the brain and reactions work overtime. It's size and toughness makes this one a real stayer, while the graphics style ensures it will appear fresh for a long time yet. There's a storm force wind of change blowing through action games. It comes from Rainbow Arts and it's called *Turrican!* **TW**



● Getting lost is easy.



● Mutant skulls are only one of the hazards.



● Look out! Behind you!

SECOND OPINION

"A really good game. Lots of disgusting things to kill and excellent parallax scrolling. It's also a very big game that's going to keep you going for a long, long time." AW

GREEN SCREEN

Complex mix of colour makes life tricky at times.

FIRST DAY TARGET SCORE

Finish World One, Section Two

The Verdict

GRAPHICS 92%

SONICS N/A

GRAB FACTOR 88%

STAYING POWER 91%

AA RATING 90%

ARMAGEDDON!

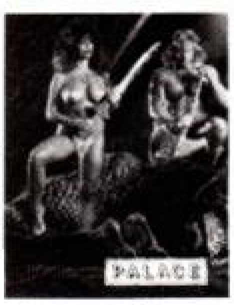
Violence is synonymous with computer games. Following the trends set in the movies of recent years, they have become a vent for the darker side of the human psyche. Now, with the release of Rainbow Arts' supremely savage *Turrican*, *AA* has drawn on many blissful hours of murderous mayhem and is proud to present its top thirty most vicious, nasty, bloodsoaked, death-dealing, mega-wasting, berserk, crazy charges into the realms of annihilation ever seen on a CPC. Fun isn't it!

1Operation Wolf, *Ocean*



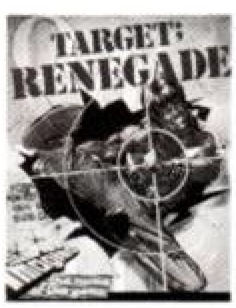
The all-time top mass-murder romp. Brilliantly adapted from the arcade. Packed with guns, knives, armoured enemies, tanks, planes and civillians, this one's a real killer. The game's motto surely being "come and have a go if you think you're 'ard enough". So far none have even come close!

2 Barbarian II, *Palace*



Sword-play city. Cut out hearts, decapitate chickens or be eaten by large prehistoric lizards! Spiff central!

3 Target Renegade, *Ocean*



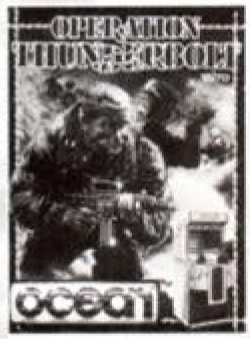
Tasteless to the core, you can punch women and bust heads with sledge hammers. And if you get bored you can kill your partner! Kneeing people in the face has never been easier.

4 Afterburner, *Activision*



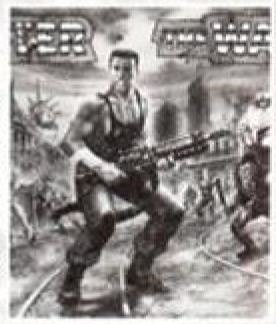
Guns and ammunition galore in this airborne arcade romp. Very low on the IQ factor, there's so much to shoot down who cares? Guided missiles and an F14 make for excellent gaming.

5 Operation Thunderbolt, *Ocean*



Operation Wolf in stereo. Two-player mega-death with laser sights, bullet-proof jackets and rocket grenades.

6 After the War, *Dinamic*



Futuristic beat-em-up blended with a great arcade shoot-out. Class graphics and load-sacorpses. Jolly little game really!

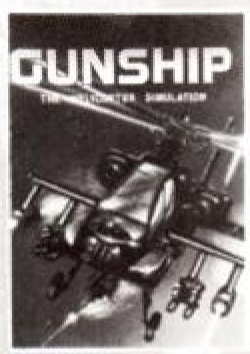
7 Turrican, *Rainbow Arts*

The arcade adventure gets serious. One man, masses of firepower and billions of things/people/monsters to kill.

8 Gauntlet, *US Gold*

The ultimate cannon-fodder game. The creatures come in waves, and promptly die in waves. So much to kill, so little time!

9 Gunship, *Microprose*



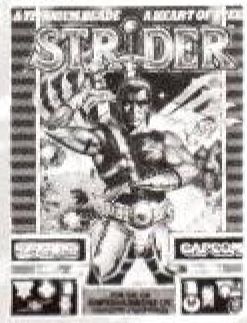
High tech' military frolics. Fly over interesting new countries and bomb them back to the Stone Age. Love the smell of napalm in the morning...

10 Laser Squad, *Bladesoft*

Slow but sure. The classic Auto Cannon led to belt-fed carnage everytime it was used. Locate, line up and lay out friends and enemies alike.

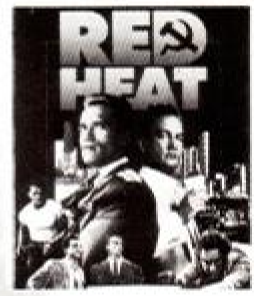
11 Barbarian, *Palace*
Neat head-to-head sword slaying.

12 Space Harrier, *Elite/Encore*
High speed hyper-blast.



13 Strider, *US Gold*
With a sword this big, who needs world peace anyway?

14 Theatre Europe, *PSS*
Re-enact WWII, for fun and profit.



15 Red Heat, *Ocean*
Limited graphics and gameplay, but with the chance to blow a granny's brains out, at point-blank range.

16 Bad Dudes vs Dragon Ninja, *Ocean*
Ultra-fast ninja carnage.



17 Renegade, *Ocean/Hit Squad*
A truly classy New York beat-em-up

18 Tempest, *Electric Dreams*
A real wrist-acher of an arcade.

19 P-47, *Firebird*
Beautiful shoot-out to watch, beautiful to play.

20 Shinobi, *Virgin Games*
Kill ninjas 'till you're blue in the face!

21 Silk Worm, *Virgin Games*
Straightforward blasting charge with that magic something. (Those somethings wouldn't be large guns, would they?)

22 Freddy Hardest, *Dinamic*
More Spanish slaughter and knuckle-dusting.



23 Way of the Exploding Fist, *Melbourne House*
The first quality martial arts massacre. (*AA*'s first Mastergame too!)

24 Trantor, *US Gold*
The last stormtrooper stomps the terra'.

25 R-Type, *Activision*
A Speccy port, but with power-ups all the way for exciting slaughter.

26 Thundercats, *Elite/Encore*
Cartoon-based cat fight.

27 Streetfighter *US Gold*
One-on-one fist fighting action, slow but strong.



28 Navy Moves, *Dinamic*
Fry folks with flame in Part II!

29 Predator, *Activision*
Arnie goes ape (again) with guns and aliens.

30 Psycho Pigs UXB, *US Gold.* Human Killing Machine, *US Gold.* Raid Over Moscow, *US Gold.* Assault on Port Stanley, *Amsoft.* Ninja Massacre, *Codemasters.* Mission Genocide, *Firebird...*
Not the best games in the world, but what wonderfully insensitive titles! It's what computer entertainment's all about.

TYPE-INS

Only three pages of *Type-Ins* this month? What an outrage! Well, you know what to do...

BIGPRINT

Think big. R Tweedie did, and the result is *Bigprint*. Double-sized characters can be printed in any mode.

Simply run the program once and an RSX is set up.

```
|BIGPRINT,x,y,@text$,p1,p2
```

The example prints the string text$ at screen coordinates x and y. Pen 1 is the colour for the top half and pen2 for the bottom.

```
{AoBl} 1·'····BIGPRINT·by·R.Tweedie(THE·GREAT)
{CnBk} 2·REM·>DANGER<·SAVE·BEFORE·RUNNING
{MrAw} 3·REM···DO·NOT·RUN·TWICE!!!!!!!!
{MkAn} 20·MEMORY·&5FFF
{OlAv} 30·DATA·01,11,60,21,09,60,C3,D1
{PoAv} 40·DATA·BC,FC,A6,11,60,00,00,00
{NpAv} 50·DATA·00,16,60,C3,1F,60,42,49
{HiAw} 60·DATA·47,50,52,49,4E,D4,00,FE
{OnBi} 70·DATA·05,C2,C4,60,CD,93,BB,F5
{JvAw} 80·DATA·DD,6E,04,DD,66,05,46,23
{OvAv} 90·DATA·5E,23,56,DD,6E,06,DD,66
{NjAx} 100·DATA·08,C5,D5,E5,1A,47,CD,06
{FsAx} 110·DATA·B9,78,CD,81,60,47,CD,09
{MxAu} 120·DATA·B9,E1,5D,54,CD,75,BB,DD
{OpAv} 130·DATA·7E,02,CD,90,BB,78,CD,5A
{BlAw} 140·DATA·BB,3C,CD,5A,BB,6B,62,2C
{AoAw} 150·DATA·CD,75,BB,DD,7E,00,CD,90
{HnBi} 160·DATA·BB,78,3C,3C,CD,5A,BB,3C
{PiAv} 170·DATA·CD,5A,BB,6B,62,24,24,D1
{KrAx} 180·DATA·13,C1,10,BD,F1,CD,90,BB
{OjAv} 190·DATA·C9,CD,A5,BB,EB,CD,AE,BB
{KkBj} 200·DATA·F5,0E,02,06,04,C5,1A,0F
{IsBl} 210·DATA·0F,0F,0F,06,04,1F,CB,1E
{AtAw} 220·DATA·CB,2E,10,F9,7E,23,77,06
{AmBk} 230·DATA·07,23,10,FD,1A,06,04,1F
{HsAv} 240·DATA·CB,1E,CB,2E,10,F9,7E,23
{FmBj} 250·DATA·77,06,07,2B,10,FD,13,C1
{KwBi} 260·DATA·10,D3,06,08,23,10,FD,0D
{HrAx} 270·DATA·20,C9,F1,C9,21,D1,60,7E
{GsAx} 280·DATA·FE,0D,C8,CD,5A,BB,23,18
{CuAx} 290·DATA·F6,2A,20,57,52,4F,4E,47
{CnAw} 300·DATA·20,41,4D,4F,55,4E,54,20
{OxAx} 310·DATA·4F,46,20,50,41,52,41,4D
{MxAu} 320·DATA·45,54,45,52,53,20,2A,0D
{AvAt} 330·DATA·00,00,00,00,00,00,00,00
{HsAm} 340·DATA·end
{BxAp} 350·add=&6000
{LoBn} 360·READ·a$:IF·a$="end"THEN·CALL·&6000:
        GOTO·390
{BwAw} 370·POKE·add,VAL("&"+a$):add=add+1
{MuAm} 380·GOTO·360
{PwBm} 390·CLS:a$="Bigprint":b$="By·R.Tweedie"
{PpBq} 400·|BIGPRINT,5,5,@a$,1,1:|BIGPRINT,10,10,
        @b$,1,1
```

PUSH-POP (6128 only)

Don't let that extra memory go to waste. George Lovell's *Push-Pop* utilises the 6128's extra memory, allowing you to store four extra screens. When the program is run a binary file is saved. It can be re-loaded with:

```
MEMORY &A4FF:LOAD"PUSH-POP",&A500:CALL
  &A500
```

Two RSXs are installed. They are |PUSH and |POP. To store a screen use |PUSH,n. To recall use POP,n. n can be a number between one and four.

```
{EkBi} 10·MEMORY·&A4FF:ad=&A500:RESTORE·100
{KtAn} 20·FOR·k=1·TO·11
{JqAr} 30·chk=0:FOR·i=1·TO·9
{NpAu} 40·READ·b$:v=VAL("&"+b$)
{JkAs} 50·POKE·ad,v:chk=chk+v
{CmAp} 60·ad=ad+1:NEXT
{FnCk} 70·READ·b$:IF·chk<>VAL("&"+b$)·THEN·PRINT
        "ERROR·in·LINE";i*10+90:END
{OxBk} 80·NEXT:SAVE"push-pop.bin",b,&A500,92
{HnBn} 90·CALL·&A500:PRINT"|PUSH·and·|POP
        ·installed"
{EmBi} 100·DATA·1,E,A5,21,A,A5,CD,D1,BC,3DE
{OjBj} 110·DATA·C9,0,0,0,0,16,A5,C3,1E,265
{HjBl} 120·DATA·A5,C3,3D,A5,50,55,53,C8,50,45A
{KkBi} 130·DATA·4F,D0,0,FE,1,C0,DD,7E,0,439
{AjBk} 140·DATA·FE,5,D0,C6,3,CD,5B,BD,11,492
{BxAw} 150·DATA·0,40,21,0,C0,1,0,40,ED,24F
{JuBi} 160·DATA·B0,3E,0,CD,5B,BD,C9,FE,1,49B
{LoBk} 170·DATA·C0,DD,7E,0,FE,5,D0,C6,3,4B7
{PsBj} 180·DATA·CD,5B,BD,11,0,C0,21,0,40,317
{ClAx} 190·DATA·1,0,40,ED,B0,3E,0,CD,5B,344
{BqAx} 200·DATA·BD,C9,0,0,0,0,0,0,0,186
```

Squeeze

Andrew Norris's space-saving utility is useful for all CPC owners. It compresses screens using a technique called Run Length Coding. Tape users will find that the loading time of screens is reduced. Disk users will appreciate the space saving.

The efficiency of the program depends on the individual screen. An average saving of around 25% is achieved with most screens, but savings can be far greater. To compress a screen, just run the program and follow the prompts. The screens are saved with a built-in decompressor. In addition, information can also be stored to set the border and ink colours, as well as the screen mode.

To reload a file enter:

```
MEMORY &3FFF:LOAD"screen.sqz",&4000:CALL &4000
```

```
{PtAv} 10·'·Screen·Squeezer·-·All·CPC's
{DlAr} 20·'·§·Andrew·Norris
{DxAq} 30·'·Amstrad·Action·
{DoAo} 40·'·Month·1990
{DmAv} 50·MEMORY·&3EFF:DIM·p(15)
{HmAr} 80·GOSUB·510:GOSUB·470
{CqBp} 90·PEN·1:PRINT:PRINT"Enter·mode·
        number·(0-2)·";
{GoBr} 100·m$="":WHILE·m$<"0"·OR·m$>"2":m$=
        INKEY$:WEND
{PiBq} 110·PRINT·m$:m=VAL(m$):INPUT"Enter·border·
        colour·";b
{IsBs} 120·IF·m=0·THEN·c=15·ELSE·IF·m=1·THEN·
        c=3·ELSE·c=1
{GqBo} 130·FOR·i=0·TO·c:PRINT"Enter·colour·for·
        PEN";i;
{KrAp} 140·INPUT·p(i):NEXT
{IwBn} 150·INPUT·"Enter··input·screen·name·->·";f1$
{HsBv} 160·INPUT·"Enter·output·screen·name·(.sqz)·
        assumed·->·";f2$
{CoAr} 170·f2$=f2$+".sqz"
{OuAr} 180·GOSUB·470:PEN·1
{PvBk} 190·PRINT"Mode·=";m;"·Border·colour·=";b
{HjBr} 200·FOR·i=0·TO·c:PRINT"Colour·for·PEN";i;
        "=";p(i):NEXT
{AqAu} 210·PRINT"·Input·file·";f1$
{EoAu} 220·PRINT"Output·file·";f2$
{CrBj} 230·PRINT:PRINT"Is·this·correct·(Y/N)"
{BrAx} 240·a$="":WHILE·a$<>"Y"·AND·a$<>"N"
{BnAu} 250·a$=UPPER$(INKEY$):WEND
{FuAu} 260·IF·a$="N"·THEN·80
{NxAu} 270·GOSUB·470:PEN·1:PRINT
{OwBp} 280·PRINT"Input·source·disk·....·and·hit·
        <Return>"
{KjAs} 290·WHILE·INKEY$="":WEND
{PoAp} 300·MODE·m:BORDER·b
{BsAx} 310·FOR·i=0·TO·c:INK·i,p(i):NEXT
{MkAv} 320·LOAD·f1$,&C000:CALL·&3F00
{JpAu} 330·GOSUB·470:PEN·1:PRINT
{GnBq} 340·k=PEEK(&4099):j=PEEK(&409B)*256+PEEK
        (&409A)-&4000
{AoCs} 350·IF·(k=255·AND·j<0)·OR·j>&4000·THEN·
        PRINT"Unable·to·squeeze,·screen·too·
        compact":END
{HoBo} 360·PRINT"Squeeze·ratio·=";(1-j/&4000)
        *100;"%"
{PnBs} 370·PRINT:PRINT"Enter·destination·disk·and·
        hit·<Return>"
{JpAs} 380·WHILE·INKEY$="":WEND
{FrAt} 390·SAVE·f2$,b,&4000,j
{DmBp} 400·PRINT:PRINT"To·re-load·the·squeezed·
        screen"
{OkAv} 410·PRINT"Type·the·following·:-"
{ImBj} 420·PRINT:PRINT"memory·&3fff:load";CHR$(34);
{GmAw} 430·PRINT·f2$;CHR$(34);",&4000:";
{CkAs} 440·PRINT"call·&4000"
{OxBr} 450·PRINT:PRINT"This·will·restore·the·
        screen"
{NxAk} 460·END
{JlBm} 470·INK·1,0:INK·2,6:INK·3,2:INK·0,26:
        BORDER·26
{MiBn} 480·MODE·1:PEN·2:PRINT"·Screen·Squeezer·
        v1.0·"
```

```
{HlBi} 490·PEN·3:PRINT"=========================="
{KvAm} 500·RETURN
{AqBt} 510·GOSUB·470:PEN·1:PRINT:PRINT"Please·
        wait·........·"
{AoBo} 520·tot=0:lin=19:size=20*lin-1:start=&3F00
{MxBj} 530·FOR·add=start·TO·start+size
{DjBn} 540·READ·a$:IF·LEN(a$)=4·THEN·GOSUB·590
{PoAw} 550·byte=VAL("&"+a$):tot=tot+byte
{OqAp} 560·POKE·add,byte
{AuAk} 570·NEXT
{FvAn} 580·RETURN
{OlCt} 590·chk=VAL("&"+a$):IF·chk<>tot·THEN·PRINT
        "Error·in·data·line·"(add-
start)/20:PRINT·CHR$(7):END
{ImAu} 600·READ·a$:tot=0:RETURN
{NmCi} 610·DATA·CD,B0,3F,DD,E5,FD,E1,AF,11,FF,41,
        06,00,12,1B,10,FC,21,00,C0,097C
{BnCn} 620·DATA·13,7E,E5,26,00,6F,19,36,01,E1,
        7C,23,FE,00,20,F1,06,00,EB,7E,0759
{KjCl} 630·DATA·FE,01,20,11,23,10,F8,3E,FF,DD,
        77,00,DD,36,01,00,DD,36,02,00,0715
{FqCl} 640·DATA·C9,7D,DD,77,00,21,00,C0,DD,
        23,DD,23,DD,23,7E,11,01,00,23,F5,0823
{CvBx} 650·DATA·7C,B5,28,3A,F1,46,B8,20,03,13,
        18,F2,F5,7A,FE,00,20,11,7B,FE,08D9
{LwCj} 660·DATA·05,30,0C,43,F1,DD,77,00,DD,23,
        10,F9,00,18,D7,FD,7E,00,DD,77,0890
{DqCl} 670·DATA·00,DD,73,01,DD,72,02,F1,DD,77,03,
        00,DD,23,DD,23,DD,23,DD,23,08EA
{AmCj} 680·DATA·18,BC,FD,7E,00,DD,77,00,DD,73,01,
        DD,72,02,F1,DD,77,03,DD,23,098D
{IsCk} 690·DATA·DD,23,DD,23,DD,23,DD,E5,E1,FD,75,
        01,FD,74,02,C9,DD,21,76,40,0B06
{CuCm} 700·DATA·CD,11,BC,DD,77,00,CD,3B,BC,DD,70,
        01,DD,71,02,DD,23,DD,23,06,0956
{BoCm} 710·DATA·10,C5,05,78,CD,35,BC,DD,70,01,DD,
        71,02,DD,23,DD,23,C1,10,ED,096C
{FvBt} 720·DATA·DD,23,C9,00,00,00,00,00,00,00,00,
        00,00,00,00,00,00,00,00,00,01C9
{CuBv} 730·DATA·00,00,00,00,00,00,00,00,00,00,00,
        00,00,00,00,00,CD,47,40,DD,0231
{JmCj} 740·DATA·E5,FD,E1,21,00,C0,DD,23,DD,23,DD,
        23,DD,46,00,FD,7E,00,B8,28,0A22
{PtCm} 750·DATA·09,70,23,7C,B5,C8,DD,23,18,EE,DD,
        23,DD,7E,02,DD,56,01,DD,5E,0967
{IwCk} 760·DATA·00,77,23,1B,F5,7C,B5,20,02,F1,C9,
        7A,B3,20,09,F1,DD,23,DD,23,08FE
{LpCl} 770·DATA·DD,23,18,CC,F1,18,E6,DD,21,76,40,
        DD,7E,00,CD,0E,BC,DD,46,01,099D
{IuCm} 780·DATA·DD,4E,02,CD,38,BC,DD,23,DD,23,06,
        10,C5,05,78,DD,46,01,DD,4E,0895
{JuBv} 790·DATA·02,CD,32,BC,DD,23,DD,23,C1,10,ED,
        DD,23,C9,00,00,00,00,00,00,0744
```

Tunegen (6128 only)

Ever fancied spicing up your games with continious music? *Tunegen*, from Nicholas Keeling, allows you to compose an interrupt-driven tune to use from BASIC. Move the cursor around with the cursor keys. Press space to place a note. Pressing control with the left or right arrows allows you to flip between pages. There are 10 pages of 80 notes available.

Press f9 to increase the tempo, and f6 to decrease it. The tempo can range from 1 (very fast) to 150 (very slow).

Pressing P plays the tune. It will continue till it reaces the end of the current page.

DEL deletes the note which the cursor is positioned over.

S saves the music and associated machine code. It will save up to the page that you were on. It is important that you don't leave any spaces between notes – the program will crash if you do. You will be given instructions on how to load your music back.

464 owners should be able to get the program to work by deleting the CLEAR INPUT in line 1050.

```
{JwAq} 10·'Interrupt·driven
{FlAp} 20·'tune·generator
{GtAq} 30·'by·Nick·Keeling
{LwAj} 40·:
{MsAu} 50·MODE·2:PRINT·"WAIT·PLEASE.."
{BqAn} 60·GOSUB·1290
{OpBk} 70·INK·0,2:BORDER·4:INK·1,26:INK·2,21
{KpAo} 80·ENV·1,15,-1,5
{JsAq} 90·note$=CHR$(237)
{PlBk} 100·DIM·note(80,11),y(80,10),freq(24)
{KkAo} 110·FOR·sety=1·TO·80
{CxAs} 120·FOR·sety2=1·TO·10
{DoAq} 130·y(sety,sety2)=12
{EvAm} 140·NEXT:NEXT
{CkAp} 150·RESTORE·200
{AtAq} 160·FOR·set=1·TO·24
{EkAn} 170·READ·n
{GmAo} 180·freq(set)=n
{BiAk} 190·NEXT
{GxBj} 200·DATA·119,127,134,142,150,159,169
{DrBj} 210·DATA·179,190,201,213,225,239,253
{EoBi} 220·DATA·268,284,301,319,338,358,379
{LsAq} 230·DATA·402,426,451
{FjAu} 240·MODE·2:x=1:page=1:tempo=10
{JiAw} 250·LOCATE·1,12:PRINT·CHR$(143)
{CxAx} 260·LOCATE·35,25:PRINT·"PAGE·1"
{GvAs} 270·'position·notes
{MnBi} 280·IF·INKEY(2)=0·THEN·GOSUB·550
{PtBj} 290·IF·INKEY(0)=0·THEN·GOSUB·620
{BjBj} 300·IF·INKEY(1)=0·THEN·GOSUB·690
{NiBk} 310·IF·INKEY(8)=0·THEN·GOSUB·760
{JnBj} 320·IF·INKEY(27)=0·THEN·GOSUB·830
{MjBj} 330·IF·INKEY(79)=0·THEN·GOSUB·900
{LvBj} 340·IF·INKEY(47)=0·THEN·GOSUB·970
{HpBl} 350·IF·INKEY(60)=0·THEN·GOTO·1010
{LxBm} 360·IF·INKEY(3)=0·THEN·tempo=tempo+1
{IkBl} 370·IF·INKEY(4)=0·THEN·tempo=tempo-1
{FuBp} 380·IF·INKEY(1)>0·THEN·page=page+1:GOSUB·440
{HqBr} 390·IF·INKEY(8)>0·THEN·page=page-1:GOSUB·440
{KwAx} 400·IF·tempo>150·THEN·tempo=1
{FlAw} 410·IF·tempo<1·THEN·tempo=150
{OjBk} 420·LOCATE·1,25:PRINT·"TEMPO·:";tempo;"·"
{HtAl} 430·GOTO·280
{CkAp} 440·'print·page
{AtAn} 450·MODE·2
{KkAw} 460·IF·page>10·THEN·page=10
{PpAu} 470·IF·page<1·THEN·page=1
{EpBi} 480·LOCATE·35,25:PRINT·"PAGE";page
{BwAr} 490·FOR·x=1·TO·80
{BnAt} 500·LOCATE·x,y(x,page)
{PkBq} 510·IF·note(x,page)=0·THEN·PRINT"·"·ELSE·
        PRINT·note$
{FwAk} 520·NEXT
{JuBq} 530·x=1:LOCATE·x,y(x,page):PRINT·CHR$(143)
{AnAo} 540·RETURN
{ApAk} 550·'down
{IiBj} 560·LOCATE·x,y(x,page):PRINT"·"
{JoAs} 570·y(x,page)=y(x,page)+1
{NiBk} 580·IF·y(x,page)>24·THEN·y(x,page)=1
{FpBl} 590·LOCATE·x,y(x,page):PRINT·CHR$(143)
{JuBu} 600·IF·note(x,page)<>0·THEN·note(x,page)=
        freq(y(x,page))
{GnAn} 610·RETURN
{IlAl} 620·'up
{EkBj} 630·LOCATE·x,y(x,page):PRINT"·"
{FvAt} 640·y(x,page)=y(x,page)-1
{PtBk} 650·IF·y(x,page)<1·THEN·y(x,page)=24
{KuBl} 660·LOCATE·x,y(x,page):PRINT·CHR$(143)
{EvBv} 670·IF·note(x,page)<>0·THEN·note(x,page)=
        freq(y(x,page))
{PoAn} 680·RETURN·
{GpAk} 690·'right
{HpAt} 700·LOCATE·x,y(x,page)
{AxBs} 710·IF·note(x,page)<>0·THEN·PRINT·note$·
        ELSE·PRINT"·"
{NiBu} 720·x=x+1:IF·x>80·THEN·CLS:page=page+1:
        GOSUB·440:RETURN
{ElBq} 730·IF·note(x,page)=0·THEN·y(x,page)=
        y(x-1,page)
{JlBl} 740·LOCATE·x,y(x,page):PRINT·CHR$(143)
{KpAn} 750·RETURN
{KtAl} 760·'left
{HxAt} 770·LOCATE·x,y(x,page)
{BpBr} 780·IF·note(x,page)<>0·THEN·PRINT·note$·
        ELSE·PRINT"·"
{PxBv} 790·x=x-1:IF·x<1·THEN·CLS:page=
        page-1:GOSUB·440:RETURN·
{HiBp} 800·IF·note(x,page)=0·THEN·y(x,page)=
        y(x+1,page)
{MvBm} 810·LOCATE·x,y(x,page):PRINT·CHR$(143)
{BkAn} 820·RETURN
{EtAo} 830·'play·tune
{PoAr} 840·FOR·play=1·TO·page
{BxAp} 850·FOR·nte=1·TO·80
{GkCo} 860·IF·note(nte,play)<>0·THEN·SOUND·
        1,freq(y(nte,play)),tempo*2,0,1
{NpCn} 870·IF·note(nte,play)<>0·THEN·SOUND·
        2,freq(y(nte,play))/2,tempo*2,0,1
{KmAm} 880·NEXT:NEXT
{HjAn} 890·RETURN
{MlAn} 900·'delete·note
{FsAp} 910·note(x,page)=0
{HmBj} 920·LOCATE·x,y(x,page):PRINT"·"
{MvAw} 930·LOCATE·x,12:PRINT·CHR$(143)
{CvAq} 940·y(x,page)=12
{PwAr} 950·SOUND·1,50,2,15
{AvAn} 960·RETURN
{IjAo} 970·'play·note
{DvBi} 980·note(x,page)=freq(y(x,page))
{JpAw} 990·SOUND·3,freq(y(x,page)),3,15
{BrAn} 1000·RETURN
{IpAl} 1010·'save
{NiAm} 1020·MODE·1
{KsBt} 1030·PEN·2:LOCATE·8,2:PRINT"POKING·DATA.·
        PLEASE·WAIT":PEN·1
{DrBl} 1040·LOCATE·17,12:PRINT·"NOTE····PAGE"
{DqAs} 1050·p=1:x=1:CLEAR·INPUT
{LkAs} 1060·length=page*80*2
{ClBl} 1070·FOR·addr=&80B0·TO·&80B0+length·STEP·2
{EnAw} 1080·POKE·addr,note(x,p)·MOD·256
{CkBk} 1090·POKE·addr+1,INT(note(x,p)/256)
{HmBi} 1100·x=x+1:IF·x=81·THEN·x=1:p=p+1
{EwAv} 1110·LOCATE·17,14:PRINT·x
{KlAt} 1120·LOCATE·25,14:PRINT·p
{BrAl} 1130·NEXT
{MxBp} 1140·POKE·addr+1,0:POKE·addr+2,0:
        POKE·addr+3,0
{OxAl} 1150·MODE·1
{AvAw} 1160·PRINT"Saving·to·TUNE····.BIN"
{AqAq} 1170·MEMORY·&801A
{DsAs} 1180·POKE·&8038,tempo
```

```
{HlBl} 1220·PRINT·"LENGTH=&";HEX$(length+148)
{HvAl} 1230·PRINT
{EvBi} 1240·PRINT·"To·load,·type...":PRINT
{KjCi} 1250·PRINT"MEMORY·&801A:LOAD"+CHR$(34)+
        "TUNE"+CHR$(34)+",&8020":PRINT
{LjBn} 1260·PRINT·"CALL·&8027·to·start·tune."
{CpBl} 1270·PRINT·"CALL·&8020·to·stop·tune."
{PtAn} 1280·PRINT:END
{AqAq} 1290·MEMORY·&3FFF
{JtAq} 1300·RESTORE·1380
{IwAo} 1310·addr=&8020
{HmBo} 1320·READ·byte$:IF·byte$="end"·THEN·RETURN
{LjAr} 1330·FOR·a=1·TO·19·STEP·2
{DlBj} 1340·POKE·addr,VAL("&"+MID$(byte$,a,2))
{HnAo} 1350·addr=addr+1
{HwAk} 1360·NEXT
{HtAn} 1370·GOTO·1320
{PpAv} 1380·DATA·210080CDEBCC9210680
{IiAv} 1390·DATA·06830E00114480CDEFBC·
{BrAv} 1400·DATA·21008011010001010OCD
{HjAu} 1410·DATA·E9BCCD9F80C92A15807E
{FvAv} 1420·DATA·5F237E5723221580B3FE·
{LkAv} 1430·DATA·00CA9F806B62CB3ACB1B
{FjAx} 1440·DATA·3E004DCD34BD3E014CCD
{IuAw} 1450·DATA·34BD3E024BCD34BD3E03
{HvAw} 1460·DATA·4ACD34BD3E080E10CD34
{FqAx} 1470·DATA·BD3E090E10CD34BD3E0B
{EkAv} 1480·DATA·0E64CD34BD3E0C0E0ACD
{NmAv} 1490·DATA·34BD3E0D0E01CD34BD3E
{CxAv} 1500·DATA·070E3CCD34BDC921B080
{EwAu} 1510·DATA·221580C3448000000000
{EiAu} 1520·DATA·000000004687062DA8A7
{JlAm} 1530·DATA·end
```

{What are these funny codes}? And·what·are·these·blinkin'·dots?

You may well ask! As a matter of fact, it's all part of *AA*'s drive to make *Type-Ins* as foolproof as possible. You see you don't type in that strange four-letter code at the beginning of each line in *Type-Ins*! They are special checksum codes designed to make your life easier. All you need is the short *Type-Writer* listing printed below, which produces those magical codes for you.

Type-Writer works by producing a code based on all the characters in a line of BASIC. This code is printed every time the computer encounters a 'Return'. After you have RUN *Type-Writer* the computer will produce these checksums indefinitely. *Type-Writer* doesn't need to be retained in memory. In fact, it is always wise to get rid of it with 'NEW' before you start to enter the listing – you don't want it to become part of the program you're typing in! Compare the codes with those printed in the magazine (yours will appear at the end of each line, but we put them at the start for clarity).

If they are the same then all is well, and you'll be able to sleep at nights. If they're different, then what you've typed is not the same as we've printed, and your typing is at fault.

When you get these conflicting checksums, don't panic! EDIT the line and check it for differences. Remember that *Type-Writer* is very sensitive and can detect swapped characters and embeded spaces in lines. Also take note of similar-looking characters. The letter 'l' can look deceptively like the number '1' in listings. When you find your typo then ammend the line to read like the one printed. *Type-Writer* will now give a correct report.

Type in the following listing and save it. If you get a data error when you run the program then check out lines 200-310. Once everything is hunky-dory and it seems to run OK then you can put it to its first real test. List the program. After every line of the listing a checksum should appear, and it should be identical to those that appear in these pages.

```
{LxAn} 10·'Type-Writer
{NkBj} 20·'Public·Domain,·by·Pat·McDonald
{BqAw} 30·'Amstrad·Action·June·1989
{HiBp} 40·flag=0:PRINT:INPUT"Am·I·a·464·(Daft·
        question!)";h$
{IsBj} 50·a=HIMEM-93:MEMORY·a-1:RESTORE·200
{PjAr} 60·FOR·b=a·TO·a+&5D
{ArAv} 70·READ·c$:d=VAL("&"+c$)
{AsAr} 80·POKE·b,d:e=e+d
{IqAl} 90·NEXT·b
{JmBu} 100·IF·e<>10566·THEN·PRINT"Error·in·data.
        ·Please·Check.":END
{KuBs} 110·IF·LEFT$(h$,1)="y"OR·LEFT$(h$,1)="Y"THEN
        ·POKE·a+8,&A4
{AkAo} 120·z=a+34:e=0
{AlAs} 130·f=ABS(INT(z/256))
{DwAq} 140·g=ABS(((z/256)-f)*256)
{NqAx} 150·POKE·a+40,g:POKE·a+41,f:POKE·a+45,g
{CtBm} 160·POKE·a+46,f:POKE·a+57,g:POKE·a+58,f
{NkBi} 170·POKE·a+65,g:POKE·a+66,f:POKE·a+77,g
{LxAx} 180·POKE·a+78,f:POKE·a+85,g:POKE·a+86,f
{FiAu} 190·POKE·a+90,g:POKE·a+91,f
{JmAv} 200·DATA·e5,c5,f5,fe,0d,20,18,21
{NpBi} 210·DATA·8a,ac,01,00,06,51,59,7e
{ClAw} 220·DATA·fe,00,28,11,47,81,10,fd
{ErAv} 230·DATA·4f,eb,09,eb,23,18,f0,f1
{PrAv} 240·DATA·c1,e1,cf,fe,93,3e,20,cd
{GvAx} 250·DATA·22,90,3e,7b,cd,22,90,7b
{KvAt} 260·DATA·07,07,07,07,e6,0f,c6,41
{CxAv} 270·DATA·cd,22,90,7b,e6,0f,c6,69
{ExAv} 280·DATA·cd,22,90,7a,07,07,07,07
{KvAu} 290·DATA·e6,0f,c6,41,cd,22,90,7a
{IpAv} 300·DATA·e6,0f,c6,69,cd,22,90,3e
{JrBj} 310·DATA·7d,cd,22,90,18,c1,4d,61
{NuAl} 320·g=g-34
{GkBm} 330·IF·flag=0·THEN·flag=1·ELSE·GOTO·370
{DvBo} 340·POKE·a+35,PEEK(&BB5B):POKE·a+36,PEEK(&BB
        5C)
{CsBo} 350·POKE·&BB5A,&C3:POKE·&BB5B,g:POKE·
        &BB5C,f
{FwAm} 360·GOTO·50
{DpBp} 370·POKE·a+35,PEEK(&BD2C):POKE·a+36,PEEK
        (&BD2D)
{IqBn} 380·POKE·&BD2B,&C3:POKE·&BD2C,g:POKE·
        &BD2D,f
```

And the dots...

DON'T go looking for 'dots' on your keyboard when you're typing in these listings. All they're there for is to indicate spaces. We do this because if you don't get the spaces right it can cause syntax errors and all sorts of other nasties. Also, where the author has written REM statements or is centering text on the screen, it's not always easy to tell how many spaces they've used. And even though getting something like that wrong won't crash the program, it'll still give you the wrong code at the start of the line and make you *think* you've typed something wrong. All clear now?

And finally

There are two major typing errors to look out for. It's all to easy to mistake the number '1' for the letter 'l' and vice versa. Also, check letter 'O's and number '0's carefully. These are often at the root of wrong codes or crashed programs.

Good typing!

CHEAT MODE

Uncle Phil's back with another wodge of cheating, poking and Multiface-mangling...

In general there are only three things you need to do if you want to see your work helping out the CPC public here in *Cheat Mode*:

1) make it work
2) make it useful
3) make it short

In an imperfect world, however, things don't always go according to plan and if you really want to poke the newer games then no. 3 takes a nosedive... Z80 grandmaster Mike Wong has developed a brilliant system to get his pokes past Ocean's new disk protection, it is a bit on the l-o-n-g side, but, sometimes you just have to suffer for your art!

The system has been written to save your typing fingers. The main program, "PACIFIC" (get it? OCEAN...? Oh, never mind!), is common to all the routines, so once typed in you can use it over and over again with different cheats.

1) Type in "PACIFIC", and save it to disk. (Save "PACIFIC").
2) Type in the cheat bit and save it to disk. (Save "BATMAN")
3) Load "PACIFIC" then Merge "BATMAN".
4) Remove the cheat disk. Insert the game disk.
5) Type RUN and follow instructions.

You may encounter a read fail when running the poke: this is due to changing to a dodgy format game disk. If you do load the poke and CAT a normal disk, then run the routine, there should be no problem.

```
{DtAr} 1 '*** Pacific ***
{MtAp} 2 'The Disk system
{MtAp} 3 ' By Mike Wong
{FtAj} 4 '
{KvAo} 10 MODE 2:l=130
{JoAt} 20 PRINT"Please wait...":PRINT
{DsAt} 30 s=&4000:t=&41A1:GOSUB 50
{LkAl} 40 GOTO 660
{EqAq} 50 FOR n=s TO t STEP 8
{NsAr} 60 FOR p=0 TO 7:READ a$
{BjAv} 70 a=VAL("&"+a$):POKE n+p,a
{NoAq} 80 c=c+a:NEXT:READ c$
{PmAq} 90 ch=VAL("&"+c$)
{DoAt} 100 IF c<>ch THEN 120
{FvAu} 110 l=l+10:c=0:NEXT:RETURN
{LvAu} 120 PRINT"Error in line";l:END
{MpBi} 130 DATA f3,21,0d,40,11,fa,aa,01,317
{AxBk} 140 DATA 95,01,ed,b0,c9,d9,01,7e,454
{MnBi} 150 DATA fa,ed,49,01,8d,7f,ed,49,473
{AwBm} 160 DATA af,08,d9,e9,1e,06,18,08,2bd
{FqBi} 170 DATA f3,1e,65,01,7e,fa,ed,59,435
{OiBj} 180 DATA 06,f5,ed,78,1f,38,fb,ed,49f
{DvBi} 190 DATA 78,1f,30,fb,1d,20,f1,f3,3e3
{FnAx} 200 DATA c9,0e,c8,21,91,ac,16,00,313
{LlAw} 210 DATA c3,8e,ab,4f,dd,21,91,ac,486
{ErAx} 220 DATA dd,7e,00,b9,28,0a,dd,23,346
{AnBi} 230 DATA dd,23,dd,23,dd,23,18,f0,408
{ImBj} 240 DATA dd,56,01,dd,5e,02,dd,46,394
{NpAw} 250 DATA 03,3e,19,93,b8,38,07,7b,25f
{OpBk} 260 DATA 80,3d,4f,c3,74,ab,0e,18,314
{GwBj} 270 DATA c5,f5,e5,d5,cd,74,ab,d1,631
{MlAw} 280 DATA e1,f1,c1,5f,78,93,47,7c,4c0
{HnBj} 290 DATA 83,67,1e,01,14,18,da,3e,24d
{NkBi} 300 DATA 4c,32,6f,ac,3e,06,32,74,283
{JtBk} 310 DATA ac,79,1d,93,32,1c,ac,7b,34a
{NxAw} 320 DATA 32,07,ac,1e,c1,4b,c3,8f,361
{IiBk} 330 DATA ab,59,7a,32,68,ac,32,71,367
{IjBi} 340 DATA ac,22,bd,ab,7b,32,73,ac,402
{HsBn} 350 DATA 79,32,75,ac,11,6b,ac,cd,3c1
{CoBl} 360 DATA d7,ab,3a,88,ac,b7,20,f4,4bb
{OmBi} 370 DATA 11,65,ac,cd,c1,ab,11,6b,3d7
{MwBi} 380 DATA ac,cd,d7,ab,11,6e,ac,21,447
{MqBi} 390 DATA 91,ac,18,1e,cd,d2,ab,11,3ce
{CwBj} 400 DATA 69,ac,cd,d7,ab,21,88,ac,4b9
{EjBk} 410 DATA cb,6e,28,f3,c9,01,5f,ac,429
{HpBk} 420 DATA 18,0b,01,47,ac,21,88,ac,26c
{JiBj} 430 DATA 18,03,01,10,ac,ed,43,09,211
{IjBm} 440 DATA ac,1a,47,c5,13,1a,01,7e,27e
{BkBk} 450 DATA fb,f5,ed,78,87,30,fb,fa,601
{BoBl} 460 DATA ef,ab,f1,0c,ed,79,06,08,40b
{FlBk} 470 DATA 10,fe,c1,10,e6,01,7e,fb,43f
{BrBj} 480 DATA 11,00,00,c3,47,ac,0c,ed,2c0
{JvBj} 490 DATA 78,0d,1b,ed,78,f2,10,ac,3b3
{PnBi} 500 DATA 7a,b3,c2,0b,ac,11,00,00,2b7
{GpAx} 510 DATA 0c,ed,78,77,0d,23,1b,7a,2ad
{MlBi} 520 DATA b3,ca,3a,ac,ed,78,f2,29,4e3
{LvBl} 530 DATA ac,e6,20,c2,1d,ac,c3,44,444
{DoBk} 540 DATA ac,0c,ed,78,0d,ed,78,f2,481
{MuBk} 550 DATA 3a,ac,e6,20,c2,36,ac,21,3b1
{JmBk} 560 DATA 88,ac,ed,78,fe,c0,38,fa,589
{PtAx} 570 DATA 0c,ed,78,77,0d,23,3e,05,25b
{JsBk} 580 DATA 3d,20,fd,ed,78,e6,10,20,3d5
{CxBk} 590 DATA e9,c9,ed,78,f2,5f,ac,c9,5dd
{EiBi} 600 DATA 03,0f,00,00,01,08,02,4a,067
{NrAu} 610 DATA 00,09,4c,00,00,00,c8,02,11f
{CtBk} 620 DATA c8,2a,ff,00,07,0c,0f,00,213
{FjBk} 630 DATA 03,04,06,01,02,0e,00,00,01e
{GlAv} 640 DATA 16,15,99,48,00,00,00,00,10c
{NlAv} 650 DATA c7,02,00,00,00,00,00,00,0c9
```

Batman the Movie

I know *Batman the Movie* has been done to death with cheats, but if you are having problems finishing each level, Mike Wong's disk poke (merge with PACIFIC – see box this page) supplies infinite life, energy and time. You can always use the keypress cheat DE209 to move level.

```
{LoAq} 1 'Batman Disk Poke
{IrAr} 2 'merge with Pacific
{NuAr} 3 'Inf. Time + energy.
{CmAp} 4 'By Mike Wong.
{FuAj} 5 '
{FjAw} 660 s=&8000:t=&802D:l=710:GOSUB 50
{BqAv} 670 MODE 1:BORDER 0:INK 0,0
{KlAt} 680 INK 1,24:INK 2,5:INK 3,26
{AqBi} 690 PRINT"Insert BATMAN disc..."
{GkAv} 700 CALL &BB18:CALL &8000
{LlAx} 710 DATA cd,00,40,cd,0d,ab,cd,26,385
{MtAx} 720 DATA ab,3e,01,21,00,c0,cd,30,2c8
{HxAw} 730 DATA ab,cd,09,ab,3e,02,21,00,28d
{ClBi} 740 DATA 01,cd,30,ab,3e,c9,32,16,2f8
{KsBl} 750 DATA 32,af,32,53,21,32,fe,24,2db
{LrBj} 760 DATA 21,f5,16,c3,fa,aa,00,00,393
```

Multiface pokes for *Batman* disk

```
Address = EE06    Poke = C9    Inf. energy
Address = 6743    Poke = 00    Inf. lives
Address = 76EE    Poke = 00    Inf. time
```

Continental Circus

Driving yourself mad on the Continental Circuit? Spending too much time in the pits? Mike Wong shows this disk a chequered flag with another fine poke.

```
{LpAt} 1 'Continental Circus Disk poke
{IrAr} 2 'Merge with Pacific
{JkAq} 3 'Inf. Continues
{LqAo} 4 'By Mike Wong
{FuAj} 5 '
{IqAx} 660 s=&40:t=&63:l=690:GOSUB 50
{InAv} 670 PRINT"Insert CIRCUS disc..."
{FlAx} 680 CALL &BB18:MODE 0:CALL &40
{IrAw} 690 DATA cd,00,40,cd,0d,ab,cd,26,385
{MkAv} 700 DATA ab,3e,02,21,00,01,cd,30,20a
{KoBi} 710 DATA ab,cd,09,ab,21,5d,00,22,2cc
{AxBj} 720 DATA 05,01,c3,00,01,af,32,72,21d
{BkAw} 730 DATA 27,c3,00,04,00,00,00,00,0ee
```

Multiface poke for infinite continues

```
dress = 2772    Poke = 00
```

Dragon Spirit

Not forgetting those of us who need tape pokes, Graham Smith has been hard at it again and come up with more superb pokes. The first is for 1942 BC (OK, *Dragon Spirit* to you). It endows your legendary hero, quite properly, with eternal life.

```
{PwAs} 1 ' Dragon Spirit -tape-
{BvAq} 2 ' By Graham Smith
{EwAs} 3 ' Infinite lives
{JsAm} 4 ' Method 1
{FuAj} 5 '
{GpAu} 10 DATA 06,00,11,00,80,cd
{JxAu} 20 DATA 77,bc,21,11,be,22
{PqAt} 30 DATA 73,80,c3,00,80,af
{LpAt} 40 DATA 32,6b,20,c3,1d,00
{KnAr} 50 FOR j=0 TO 23:READ a$
{NqAs} 60 x=VAL("&"+a$):y=y+x
{JvAt} 70 POKE j+48640,x:NEXT j
{CuAs} 80 IF y<>2091 GOTO 100
{KoAo} 90 CALL 48640
{OsAp} 100 PRINT"data error
```

Olli & Lissa 3

So you want to be a car mechanic eh, but can't seem to find the time or energy? well Graham Smith from Street has just the thing. This tape poke for Olli & Lissa 3 will provide infinite wax for your candle, and blot out those ghastly ghosts.... What happened to Lissa by the way?

```
{CqAv} 1 ' Olli & Lissa 3 -tape-
{HvAq} 2 ' By Graham Smith
{HuAr} 3 ' Infinite time
{DlAm} 4 ' No Ghosts
{JtAm} 5 ' Method 1
{FvAj} 6 '
{BlAu} 10 DATA 3e,c9,32,30,50,32
{DwAv} 20 DATA 60,63,01,8d,7f,18
{LnAu} 30 DATA 66,01,0d,00,11,00
{IrAu} 40 DATA fc,21,d9,7f,ed,b0
{OwAr} 50 DATA c3,4d,fc,21,e6,7f
{IrAt} 60 DATA 22,4b,80,21,18,8e
{MmAp} 70 DATA 22,70,80
{BsAt} 80 FOR j=0 TO 38:READ a$
{GtAt} 90 x=VAL("&"+a$):y=y+x
{LpAu} 100 POKE j+32729,x:NEXT j
{OkAr} 110 IF y<>3778 GOTO 140
{BpAr} 120 MEMORY &7777:LOAD"
{AoAo} 130 CALL 32756
{DkAq} 140 PRINT"data error
```

Multiface poke for Olli & Lissa 3

Address = 5030	Poke = C9	Infinite wax
Address = 6360	Poke = C9	Removes ghosts

Toobin'

A final poke from the Wong keyboard. This time its a "stand alone" routine, (no need for *Pacific*). Brave the rapids, alligators and penguins (where's this supposed to be taking place, anyway?) armed only with your rubber ring, empty beer cans and infinite credits.

```
{JtAm} 1 'Toobin'
{FrAj} 2 '
{GnAu} 3 'Infinite Credits (DISK)
{FtAj} 4 '
{KnAq} 5 'By Mike Wong.
{FvAj} 6 '
{EsAt} 10 MODE 1:FOR n=&40 TO &5D
{NuAt} 20 READ a$:a=VAL("&"+a$)
{PoAt} 30 POKE n,a:c=c+a:NEXT
{MrAt} 40 IF c<>2180 THEN 120
{LqAt} 50 PRINT"Insert TOOBIN..."
{MnAu} 60 CALL &BB18:CALL &40
{OwAs} 70 DATA 21,00,01,11,00,00
{HqAt} 80 DATA 0e,41,e5,df,53,00
{DtAv} 90 DATA 21,56,00,22,05,01
{HnAq} 100 DATA c9,3c,c0,07,3e,a7
{EoAt} 110 DATA 32,e5,9c,c3,00,25
{OkAr} 120 PRINT"Error..."
```

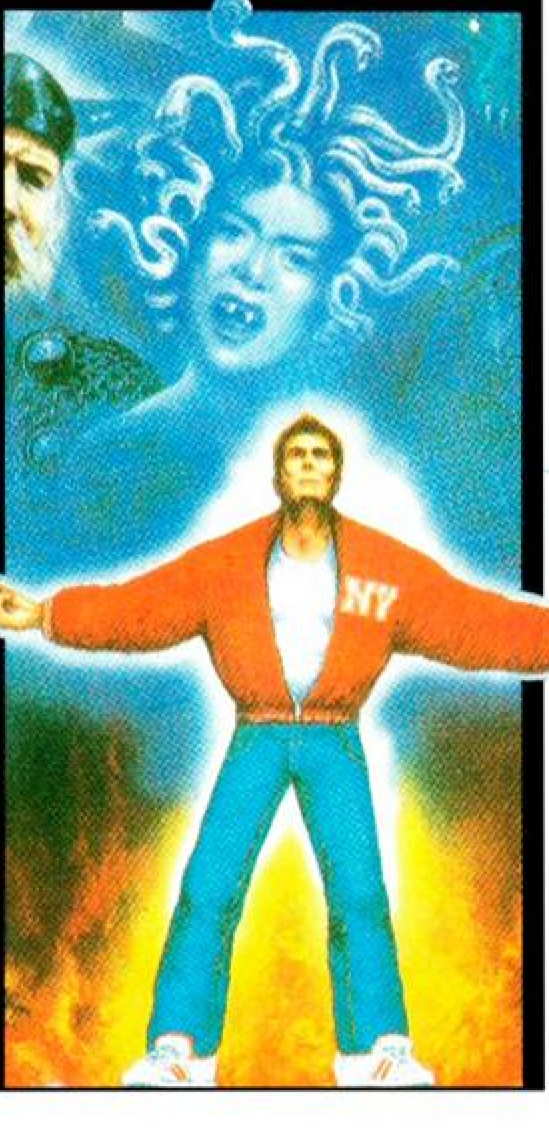


Multiface poke for infinite credits

Address = 9CE5	Poke = A7

Myth

Both Mike Wong and I agree that *Myth* is one of the most wonderful games about at present. If you haven't seen it yet, then make sure that you do soon. It's one of those rare games that is almost good enough without a cheat, but in case you get stuck here are a few hints for the more ethereal problems. Tell 'em Mike...



KEYPRESS CHEATS

Paul Whitton of Coventry has discovered some sneaky keypress cheats to make life easier on these games:

- **JINKS:** Press ESC to play the level you died on again.
- **BEDLAM:** Press COPY on the title screen to start on the level you died on.
- **SUPER STUNT BIKE SIMULATOR:** Press TAB whilst playing to go to the next level.

P Watkins (whats wrong with first names, P?), from Peterborough has two nice keypress cheats for you:

- **THE REAL GHOSTBUSTERS:** Press the keys C H E A T at any time during play and you will advance to the next level and get infinite lives.
- **TEMPEST:** Press "Q" and "A" on the "Enter to Start" screen to raise or lower the start level.

David Melville, Jody Elston, Lee Mills, and Graham Shaw suggest that to advance a level in **TURBO BOAT SIMULATOR** press PAUSE and CLR together, more turbo than you could possibly wish for.

Ben Owen, Dan Irving, Andy Price, and Peter Tilcock have put me straight on the **EAGLES NEST** cheat in *AA*55. Not only can you Type DAS CHT into the hi-score table for infinite energy, but also DAS MAP for map mode, MAP OFF to turn it off again, and DAS NME to play without enemies. It may be an old game but its certainly full of surprises.

Johnathan Hadfield, David Melville and Philip Tricklebank have all contributed a similar method to advance a little further on multiload tape games - you know, the ones everybody loves to hate! The games suggested are **THE UNTOUCHABLES** and **ALTERED BEAST** but the method may well work on others. What you need to do is make a note of the tape counter at the start of each level (listen to the tape). Then instead of allowing the game to load the next block of code, (after it says "FOUND" on *Untouchables*) wind the tape on and allow it to load a higher level. It's a bit of a tricky method, but certainly worth a try! It may save a bit of typing too!

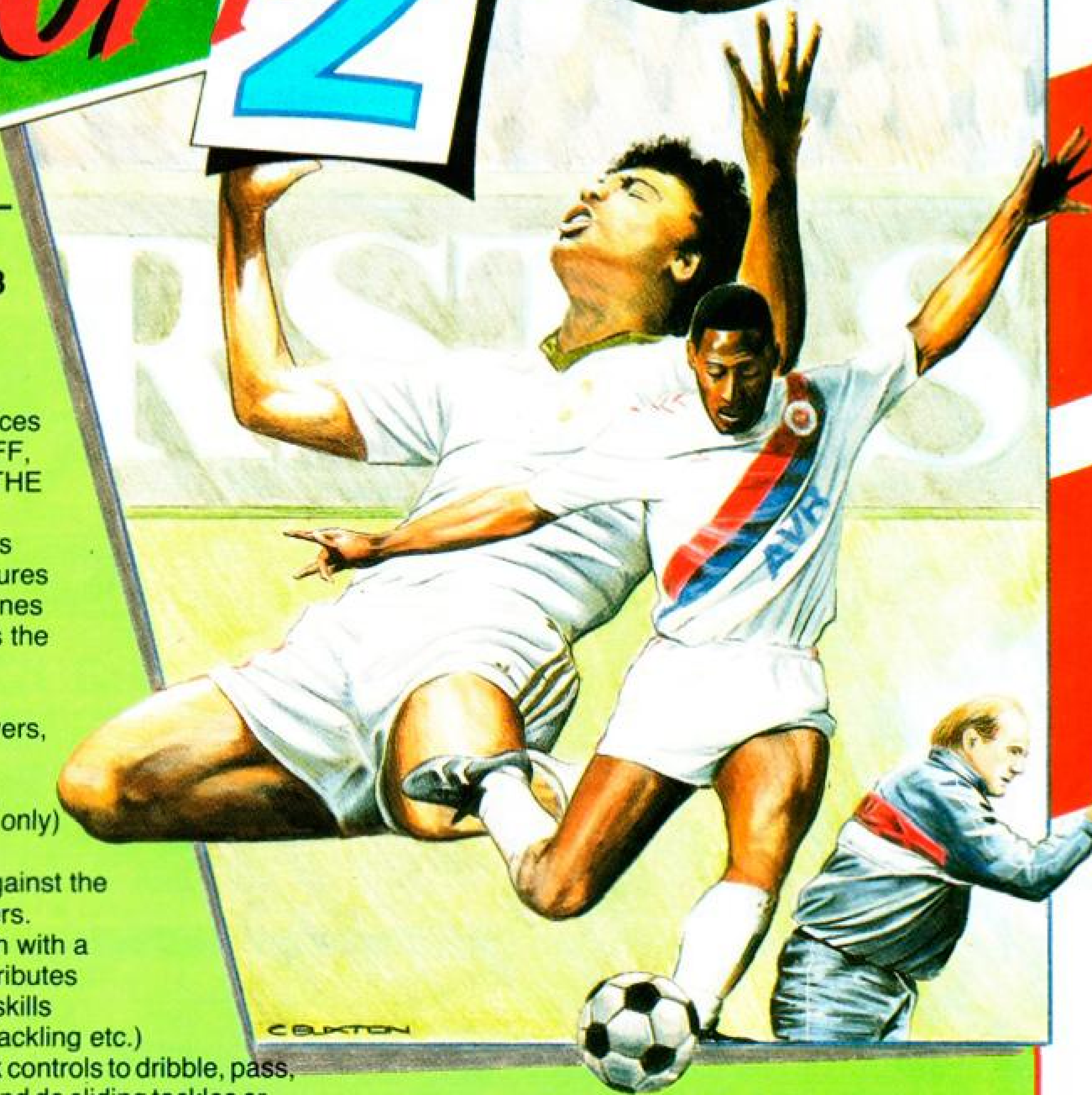








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Numerous skulls will raise the demon of the fire. Fireball those uglies guarding the orbs. A bedevilled trident will see off the dragon. The dragon holds a key to the last orb.

● **STAGE 2: GREECE**
Examine the statue for firepower. The Statue of Perseus (c'mon Trento, where were you when they did Greek mythology?) will bag you this stage. Run for your life after the doves. Pay your respects at the temple. Sword and shield work should get you ahead of Medusa. Get the old bag, she will help you head off the Hydra.

● **STAGE 3: SCANDINAVIA**
Hack and slash to get some firepower. Examine each container and collect the contents. Read the parchment and quench the flames. The lady holds the key. Get close and the dragon will see your point. Make a bolt for Odin.

● **STAGE 4: EGYPT**
Pay your respects before you go under the arches. Visiting times are very important. The ankh is a symbol of eternal life. There are flaws in the floors, watch out! Get the mask of Tut and the eye of Pharoah. Your mummy will tell you to save face. Give the mask to King Tut when he rises.

MYTH
HISTORY IN THE MAKING

DE-COMPRESSING MULTIFACE CODE

Multiface owners who enjoy looking for pokes must have noticed that the files are saved out to tape or disk in a compressed form (check out the screen contortions when saving). This is economical as far as loading time and disk/tape space are concerned, but means that you can't look through the game code. Until now, that is...

After many sleepless nightsspent working out how the Multiface compresses its code, here is an RSX (yes, I've been reading the series) routine, |EXPAND. It will restore your squashed up game files to their original glory.

Multiface files are saved out with the suffixes 1, 2, 3 etc to denote the memory block they belong to. 1 is 0000 to 3FFF, 2 is 4000 to 7FFF etc. Load the file you wish to examine at (say) &4000 then use the instruction |EXPAND,&4000 to reconstitute the original code using the memory space 4000 to 7FFF. The extension &4000 tells the prog where the compressed code starts.

1) Type in |EXPAND and save it.
2) Run the program.
3) Lower memory top : MEMORY &3FFF
4) Load MULTIFACE code : LOAD "GAME1",&4000
5) Expand to original : |EXPAND,&4000
6) Save restored code : SAVE "NEWGAME1",&4000,&4000

The code can then be loaded into a monitor/disassembler or a utility for examination.

Just a little idea you may like to try: If you make 2 copies of the same game, one just before, and one just after losing a life. Then load and expand the first at &2000 (|EXPAND,&2000) and the second at &6000 (|EXPAND,&6000). You can then get the computer to search through the two sets of code and compare them, this will tell you where the differences are, ie. the address where the lives are stored.

```
{KtAp} 1 '|EXPAND,START ADDR.
{FrAj} 2 '
{KtAu} 3 'Use the RSX |EXPAND
{FqAr} 4 'to de-compress a
{DkAq} 5 'Multiface file.
{FvAj} 6 '
{BmAx} 10 DATA 01,0D,A5,21,09,A5,C3,D1
{MsAv} 20 DATA BC,00,00,00,00,12,A5,C3
{LpAv} 30 DATA 19,A5,45,58,50,41,4E,C4
{IlAx} 40 DATA 00,F3,DD,66,01,DD,6E,00
{KiAt} 50 DATA E5,5E,23,56,2B,19,D1,13
{PmAw} 60 DATA 2B,ED,A8,ED,A8,E5,21,00
{JxAw} 70 DATA 40,19,EB,FD,E1,FD,7E,00
{DjAx} 80 DATA FE,CB,20,31,FD,7E,FF,FE
{ErAv} 90 DATA ED,20,2A,FD,7E,FE,FE,37
{KqAx} 100 DATA 20,23,FD,E5,E1,2B,2B,2B
{KrAx} 110 DATA FD,46,FC,FD,4E,FB,ED,A8
{EnAx} 120 DATA 23,78,B1,20,F9,2B,2B,2B
{LrBj} 130 DATA E5,DD,46,01,DD,4E,00,ED
{OlAw} 140 DATA 42,30,C8,18,07,FD,E5,E1
{AvBi} 150 DATA ED,A8,18,EC,E1,FB,C9,00
{JoAr} 160 MEMORY &A4FF:y=0
{DrAt} 170 FOR x=&A500 TO &A577
{GtAu} 180 READ a$:a=VAL("&"+a$)
{DiAt} 190 POKE x,a:y=y+a:NEXT
{EuAu} 200 IF y<>&3C21 THEN 230
{ArAq} 210 CALL &A500
{NsAx} 220 PRINT"|EXPAND installed":END
{AvAt} 230 PRINT"DATA ERROR!"
```

Anyone else got any useful hacking utilities? Send 'em in!

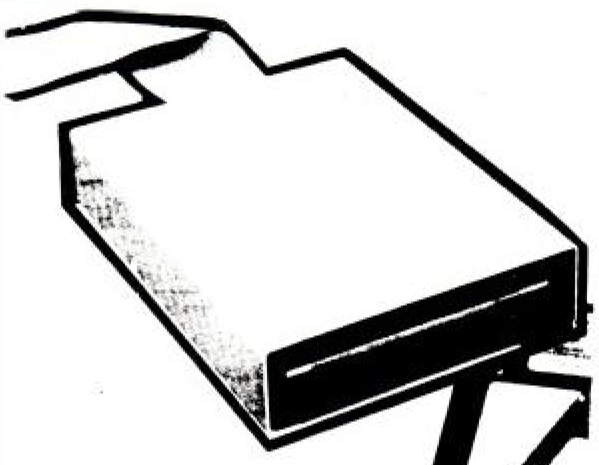
MULTIFACE POKES

A multitude of Multiface pokes from Richard Pigden of Camberley, Carl Surry from Barnet, Thor Curtis of Reykjavik (Iceland) and Paul Harwood of Rathcoole. Great stuff guys!

NAME	ADDRESS	POKE	EFFECT
Deflektor	003C	No.	Select level.
	07CF	00	Inf. lives.
Rainbow Island	20BF	00	Inf. restarts
Bombjack	0090	00	Loads of lives.
Bombjack II	02EB	00	Loads of lives.
	0649	00	Stops all enemies.
Ikari Warriors	5CEB	No.	lives - 60 (3C) max.
	5960	B7	Inf. bullets.
	59D8	B7	Inf. grenades.
	5878	18	Invulnerability.
Mikie	621C	C3	Invulnerability.
Joe Blade 3	* 2EE9	00	Inf. time (sub game)
	* 2EB6	00	Inf. time (main)
Cobra	4CCF	00	Gun shots
	4ECA	00	Inf. lives.
Yie Ar Kung Fu	883E	00	Inf. energy.
Firetrap	6DCB	FF	255 lives.
Mig 29 Soviet Fighter	08C8	00	Inf. lives.
	0CF1	00	Inf. fuel.



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AA SMALL ADS

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3 1/2" Disc drive with Romdos £80. Multiface II £25, Midi interface (Music machine) £25. 100 Amstrad magazines £30. 6128 + colour monitor and games £275. Buyer collects. Phone Colin 0239 614179.

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CPC6128 colour monitor, Mutiface II, tape recorder, Masterfile III, Multitude of games on disc and tape, magazines. £300. Phone 01 744 2229 (Hounslow, Middx)

CPC464 green screen, DMP2160 printer, paper, labels, loads of software, magazines, manual £400 or swap for Amiga A500 Batpack. Apply: Stu Goodfield, 5 Doverow Avenue, Stonehouse, Glos GL10 2EW.

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AMSTRAD CPC6128 colour monitor, DMP2000 printer, cassette recorder, Multiface II, Insider, Advanced Art Studio, Qualitos, Protext, Mini Office 2, 200+ games, eg Untouchables, SDI, 100+ magazines, books, £475 ono. Ring 0742 351687.

AMSTRAD CPC464 colour with £800 worth of latest games, 20 issues of AA, joystick, excellent condition worth £1020.00. Sell for £475.00. James Ansell, 4 The Green, Wokingham, Berkshire RG11 9PG. 0734 788303.

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Buyers Guide

This is the place to find what software and hardware is available for your CPC. We list programs by category, and provide producer; phone number; price; issue in which the item was reviewed; and last but not least, a brief description of the program's features and, where appropriate, shortcomings.

But don't take our word for it: if you're in doubt read the original review before you splash out, and make sure by asking the person you're buying from that it meets your particular needs. Best of all is a try-out, if you can find a friend who has what you're thinking of buying.

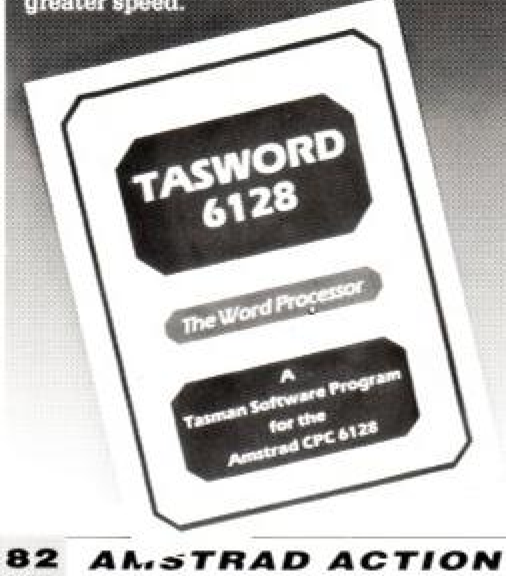
WORD PROCESSING

Brunword

Brunning Software ☎ 0245 252854
£30.00 (6128) disk, £25 (464) disk ● AA24
Complete word processor package with spelling checker, 30 000 word dictionary and card filing programme. Spell checker and dictionary loaded with the main programme. 40, 80 and 128 column screen modes and fast screen response. Tutotrial file makes learning the system easy.

Tasword

Tasman Software ☎ 0532 4388301
464, 464D, 6128, £19.95 tape, £24.95 disk ● AA1
464 is the tape based version (the same as Amsword). 464D has enhancements for a disk drive. 6128 makes full use of a 6128's extra memory. The latter pair include mailmerge facility. Easy to get to know: comprehensive help screens. Screen operations are slow, but may be customised for greater speed.



Protext

Arnor ☎ 0733 68909
£19.95 tape, £26.95 disk, £39.95 ROM ● AA3
Lightning fast on all tasks involving screen. True merging from separate files and disks to the cursor position is easy, and Protext supports standard CPC RSX's like DISC, TAPE, CAT etc. ROM version is excellent. Bad points: maximum file space limited to machine memory – about 22K on disk, 38K for the ROM version. As used by AA, if that's any recommendation (don't answer that).

PRINTERS

Manufacturers' recommended retail prices are listed as guidelines, but heavy discounts are offered by retailers. Printers require an additional lead for connection to the CPC. You'll need an Amsoft PL-1, which should be available from your local computer stockist.

Citizen 120D

☎ 0800 282692
£199 + VAT ● AA43
Dimensions: 3.7 kgs, and 370mm x 90mm x 238mm. Draft quality is 'dotty,' and poor, but NLQ is sharp and simple. A quiet beast, with cable to the computer connected on the side. Manual includes a complete written breakdown of all the printer control commands, and their effects.

Panasonic KXP1081

☎ 0753 73181
£219 +VAT ● AA29
Similar to DMP2000/2160: chunky, 9 pins, 10 inch carriage and compatible with Epson codes. Thorough A4 manual, good NLQ mode – better than DMP – and condensed, draft and NLQ modes.



Mannesmann Tally MT81

☎ 0734 788711
£149 + VAT ● AA43
Dimensions: 70mm x 100mm x 265mm; weight, 4.5 kgs. Prints Epson and IBM graphics. Draft mode print quality is good: square printhead pins put ink onto greater areas. The printed output is more ornate than the Citizen. Manual is superb, but falls down in failing to explain control codes: for that you have to buy the applications manual. Certainly a very good buy.

Star LC-10

☎ 0494 471111
£199/259 + VAT ● AA32
First price is for standard dot matrix printer. Fonts selected by button, rather than typing in fiddly control code. Second price is for relatively inexpensive colour model. Uses multi-colour ribbon to produce different mixes, though there are currently no commercial programs to take advantage of this capability.

Star LC 24-10

☎ 0494 471111
£299 + VAT ● AA47
A low-cost 24 pin, 10 inch, 80 column Letter Quality printer: 8 resident fonts, all operable from the front control panel and 3 print variations.

INTERGRATED PACKAGES

Info-Script

Brunning ☎ 0245 252854
£50 disk ● 128K only ● AA35
Billed as the "complete database with word-processor and spelling checker," it's best with 256K. Well set up, easy to use and allows for changes in layout and content. Recently 'supercharged'.

Mini Office II

Database ☎ 0625 878888
£14.95 tape, £19.95 disk ● AA6
Astonishingly cheap word processor, database, spreadsheet, graphics, comms and label printer all-in-one, it's continued to sell, and sell, and sell... Not full specification, but at this price who's complaining?



Protext Filer/Office

Arnor ☎ 0733 68909
£24.95/£34.95 disk ● AA34
Database that works comfortably with Protext, has powerful sorting options and comprehensive invoice printer. Can be slow, but good value.

EDUCATIONAL PROGRAMS

Amstrad Selection

Fernleaf Education ☎ 0474 359037
£25.95 disk/tape ● AA32
For age range 7 to 12+: Seven programs – including Fletcher's Castle, Market Stall, The Perfume Hunter, The Raiders, Ferry Captain, Treasure, and Thorn Sea.

Arc Master Pack Plus

Arc Education ☎ 0472 812226
£48 disk ● AA32
A massive pack of 90 programs: Junior; Primary; a parent/child adventure; DR Logo and word games. Each set available at £10 tape and £12.50 disk. Well presented with good graphics, reasonable musical ditties and plenty of options.

Kosmos

Kosmos ☎ 05255 3942
£9.95 tape, £13.95 disk ● AA32
Answer Back Junior Quiz lets you either answer the question; make a choice from a number of options; or say whether something is true or false. There's also Factfile 500, sets of additional questions for the program: arithmetic, spelling, sport and natural history.

The other range from Kosmos: vocabulary tutors in French, Spanish, German and Italian.

Funschool 2

Database Software ☎ 0625 878888
£9.95 tape, £14.95 disk ● AA43
So rare is it that educational software gets into the charts that it made the news pages of the weekly computer press. Actually there are three great packages here: under sixes, six to eights and over eights.



Play School

School Software ☎ 010 353 6149477
£9.95 tape, £14.95 disk ● AA32
Six different utilities including Counting, Find It, Paintbox, Shapes, Match-up and How Much? Paintbox is the best. Other programs in the range are also worth a look, including Biology, Chemistry and Physics for older students.

Wordhang

Bourne Education ☎ 0794 523301
£9.95 tape; £14.95 disk ● AA32
One of Bourne's range of ten programs. Others include Happy Letters, Numbers and Writing (all Infant); Timeman One/Two and Map Rally (all Junior); and the excellent Chemistry and Physics Revision (Senior).

Buyers Guide BUSINESS / ACCOUNTS

Protext Office

Arnor ☎ 0733 68909
£34.95 ● CPM+, 6128 only ● AA34
Requires Protext and Promerge to run. Information inputted using Protext. Mail merge templates included, and very well implemented invoice printing feature. A genuinely useful business system.

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SD Microsystems ☎ 0462 422897
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Small Traders Pack/Invoicer ● £29.95 ● AA26
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SD Microsystems have a range of quality small business systems. Consult original reviews for in-depth explanations of what each does and how it differs from the others – or better still, ring them and ask.

Buyers Guide DATABASES

Masterfile III

Campbell Systems ☎ 0378 77762
£39.95 CPM + ● AA30
With parent/child records – enabling tying together of records, saving space and time. Screen layouts and reports menu selected; not for faint hearts, but good results.

AtLast Plus

Rational Solutions ☎ 056681 511
£39.95 ● CPM+,128k machines only ● AA30
Powerful: developed into user's requirements. Data capacity restricted only by disk size, and splitting fields into smaller elements possible. Printed output impressive. Beefy processing.



Random Access Database

Minerva Systems ☎ 0392 437756
£29.95 disk ● AA6
40 or 80 column screen. Good mathematical and string operations . Random disk accessing gives speed and power.
l See also Info-Script in '4. Integrated Packages'

Buyers Guide SPREADSHEETS

Mastercalc 128

Campbell Systems ☎ 0378 77762
£33 disk ● 128K machines ● AA4
Can show two parts of spreadsheet at once. Includes notepad and calculator. Easy to use, but the mathematical formulae can only consist of the four basic arithmetic options. Slows down as more data is entered.

Matrix

Audiogenic Software ☎ 01 861 1166
£34.95 disk ● AA18
Uses disk to store data – so good capacity on the plus side, poor speed on the minus side. Graphic options excellent. Onscreen prompts rare, making it hard at first. Calculating power good.

Supercalc II

Amsoft/Sorcim ☎ 0277 230222
£49.95 CPM + ● AA4
First class documentation. Calculations can be determinative – performed on whether or not cell's contents match given value. Excellent help prompts and arithmetic functions.

Cracker

Newstar Software ☎ 245 265017
£49.00 disk CPM + ● AA9
Spreadsheets must be created from scratch. Documentation good, command sequences soon learned. Mathematical functions well done, with random numbers catered for. Files limited to 17K – and formulae programming not well implemented.

Buyers Guide SOUND

Amdrum

Cheetah ☎ 0222 555525
£34.95 ● AA13
Digital drum machine. Editor comprehensive. Not Midi compatible: to hear output you plug it into amplifier.

DHCP Midi Interface

DHCP ☎ 0440 61207
£69.95 interface, £34.95+ disk s'ware ● AA33
DHCP produce Midi software for various Midi interfaces for CPC, which are incompatible with each other.

Midi Interface

Silicon Systems ☎ 061 848 8959
£59.95 interface, £59.95 software ● AA26
Useless alone, but software you can use with it – DX7, FB01, MT32, D50 and CZ101 – is diverse. Software prices vary, and lack presentation of EMR sequencer. High performance.

Miditrack Performer

EMR ☎ 0702 335747
£49.95 interface, £79.90/£89.90 tape/disk s'ware ● AA13
Midi interface plus sequencing software to drive Midi equipped instruments. Records each instrument then plays them all at once. Onscreen layout similar to multi-track recorder. Excellent.

Ram Music Machine

RAM Electronics (Datel) ☎ 782 744707
£49.99 tape, £59.99 disk ● AA17
All in one music package: Midi interface, sound sampler and music editor. Sampler can handle one sample of just over a second. Midi controller software and music editor comprehensive. No through port, though, so 464 users must use tape version. And you can't edit live played Midi compositions.

Sound Blaster

Siren Software ☎ 061 228 1831
£34.99 ● AA23
Amplifier and pair of loudspeakers that plug into CPC for maximum 2 watts sound effects.

Foundation Step-Time Sequencer

Foundation Software ☎ 0252 543945
£34.95 disk
Quite simply the only step-time sequencer you can buy for your CPC.

Buyers Guide VISION

Advanced Art Studio

EEC ☎ 0753 888866
£24.95 disk ● AA21
Recently revitalised, this is the user-friendly, best and most powerful art package: works in all three modes. Can cycle through inks, and cut and paste different areas, transformations and reflections. Fill routines in coloured patterns needs 128k memory. Available as a standard version for £15.95.



AMX Art

Database ☎ 0625 878888
£69.95 disk (includes mouse) ● AA7
User friendly, if little unsophisticated compared

to Advanced Art Studio, but mouse helps greatly. Colour, spraycans, textures, circles and host of other features.

Cherry Paint

Siren Software ☎ 061 228 1831
£9.99 disk ● AA20
WIMP controlled – ie mouse moves pointer to various icons to pull-down menus. B/W mode 2 only, but fun. Curves are difficult, but this is a bargain.

CRL Image System

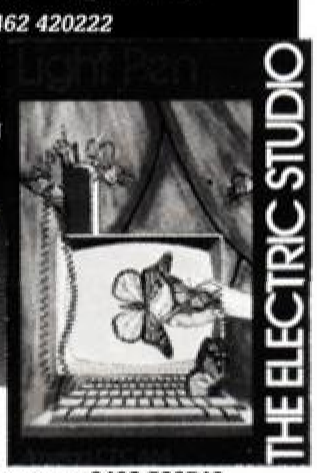
CRL ☎ 01 533 2918
£19.95 tape, 24.95 disk ● AA12
Boasts range of picture manipulations and distortions, but lacks art options. Best on finished pictures – like a mini Quantel box.

DART Scanner

Dart Electronics ☎ 0502 513707
£79.95 ● AA22
Attach reading device to your DMP2000, 3000 or 3160. Feed in picture to printer: device reads in picture as B/W image. Quality onscreen isn't amazing, but it works and it's fun.

Electric Studio Light Pen

Electric Studio ☎ 0462 420222
£19.95 cass, £29.95 disk ● AA1
Excellent drawing software, including rubber-banding shapes and lines, filling areas, spray-can etc. Accepts software written for it.



The Informer

Treasure Island Software ☎ 0492 593549
£29 disk ● AA33
For creating animated displays, suitable for classroom and shop window: takes text, graphics and animated displays and produces slide show. Works best, but not only, with Parrotry Plus (see below).

Parrotry Plus

Treasure Island Software ☎ 0492 593549
£19.95 disk● AA30
Rather than lots of effects used anywhere and at any time, Parrotry Plus 'remembers' every alteration and plays through the list to create animation. Note: can't dump pictures to printer without external program.

Vidi Digitizer

Rombo Productions ☎ 0506 414631
£89.95 ● AA15
Grabs picture from video recorder or camera and puts it on CPC screen, allowing you to alter it with an art package. Easy to use. Software on tape, disk or ROM includes superb printer dump routine.

DESK TOP PUBLISHING

AMX STOP PRESS

Database ☎ 0625 878888
£79.95 disk. 128K only
The Desk Top Publishing package for the CPC. Expensive but the price includes a mouse. A very powerful package that offers features that you'd find on many of the vastly more expensive Apple Macintosh DTP packages. If you're serious about DTP then consider no other.

Page Publisher

SD Microsystems ☎ 0462 422897
£24.95 disk £19.95 tape 128K only AA45
If you can't afford *Stop Press*, then *Page Publisher* is the second best option. Quicker and easier to use than *Stop Press*, but has fewer features. The package to use for DTP on a budget.

UTILITES

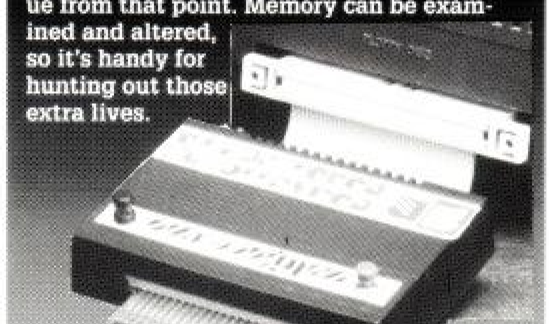
The utilities in this section that offer the facility of BACKING UP disks and files should be used only for that purpose. They are not designed to be used to pirate software, and anyone who uses these products for that purpose is breaking the law.

Nirvana

Goldmark Systems ☎ 0707 271529
£15 disk, £26 ROM AA51
Excellent disk utility that allows you to copy files and disks with ease. Uses all the computers memory to minimise disk swapping. Includes disk editor and powerful archiving software that allows you to back up entire disks to tape - rather like a tape streamer on business computers. Once you have used Nirvana then you'll never go back to using CP/M to copy files again!

Multiface II

Romantic Robot ☎ 01 200 8870 ● £47.95
Extremely popular dongle that allows you to freeze software in its tracks. You can save entire memory to disk or tape. Very useful for cheats - you can save a game when you finish a level and always continue from that point. Memory can be examined and altered, so it's handy for hunting out those extra lives.



Hackitt

Siren Software ☎ 061 228 1831
£34.99 ● AA52
Similar in operation to the Multiface, but aimed at the more dedicated hacker. Has a built in mini assembler and lots of useful hacking utilities. Not really suitable for the novice as a working knowledge of machine code is required.

RSX-LIB

Smogware Systems ☎ 0603 749132
£19.95 disk ● AA51
A neat piece of software that allows you to compile a library of RSXs from machine code routines. It can re-locate machine code and automatically set up RSX tables, making it ideal for compiling custom designed extended BASICs.

JOYSTICKS

Speedking

Konix ☎ 0495 350101 ● £ 11.95
Strangely shaped joystick moulded to fit in your hand. People tend to be polarized in their opinions about this one - they either love it or hate it. Design makes it not much use for left handed people.

Competition Pro

Dynamics ☎ 061 626 7222
● £14.95, £15.95
Old favorite joystick which many people favour. Sturdy and well built microswitch design that will out-last years of waggling. Trendy see-through version available for a pound extra.

Navigator

Konix ☎ 0495 35010 ● £14.99
Handheld joystick that follows Konix's usual strange design convention. The stick is held at the bottom with the control lever on top. Comfortable, once you get used to it.

Quickshot Turbo

Spectravideo ☎ 0235 555455 ● £10.95
The best of the 'Aircraft' style joysticks. The fire button is on the 'yoke' itself, making it a favourite for shoot 'em ups. At its best when used stuck to a desk with its suction pads.

COMMS

Micronet starter pack.

☎ 0800 200 700 ● £138
Contains all you need to get started in comms, including a years subscription to Micronet. The Modem is a very basic model, but the overall package is great value for money.

Pace Linnet

☎ 0274 488211 ● £174.80
Medium priced Hayes compatible modem that offers good features at a reasonable price. Supports the V21 and V23 standards, which should cater for most peoples needs.

Amstrad SM2400

☎ 0279 454555 ● £286.35
Expensive, but everything that you're ever likely to need in a modem. Auto-everything, supporting V21/22/22bis/23 baud rates and both pulse and tone dialing, this hayes compatible modem is a top notch product.

DISK DRIVES

DD-1

Amstrad ☎ 0279 454555 ● £149.95
Essential for 464 owners who want to upgrade to using a disk system. The package includes an interface that contains the disk operating system, and an FD-1 Disk drive.

FD-1

Amstrad ☎ 0279 454555 ● £99.95
Second 3 inch drive to add to your system. Two drives are more convenient for data transfer between disks, and improve the user-friendliness of certain programs.

3.5 inch second drive

Siren Software ☎ 061 228 1831
● £109.99 - £119.99
High capacity second drive that can store 800K of data on a single 3.5 inch disk. Owners of the 464 must already have a DD-1 in order for it to work on their machine. The standard disk operating system cannot make full use of the extra capacity of the drive, and an extended operating system is needed. The price depends on whether the new DOS is on Disc or ROM, the latter, naturally, being the more expensive.

AAfterthought

"Aaargggh – the heat, the heat!" Yup – the Future Towers air-conditioning is out again...

It's terrible, it really is. Rod's tandoori chicken sandwiches are going brown and curling at the edges, Trenton plastic AK-47 has wilted, Adam's brown ale bottles are blowing their tops off and Ollie's trousers have stuck the chair. And the worst of it is, he went off to dinner before any of us could stop him.

In fact, it's so hot we've devised a little competition for you. Is the heatwave currently affecting the *AA* offices due to:

a) Global warming due to the greenhouse effect?
b) A hole in the ozone layer over Mangotsfield?
c) The testing of atomic weapons off Bikini Atoll in 1833 or whenever it was?

Answers on a postcard please to the usual address. Closing date is the year 2050... no, perhaps not. OK then, a nice crispy tenner to whoever can think up the funniest alternative reason for *AA*'s heatwave and get it to us by the 30th of June. Send it on a postcard to: **TOWERING INFERNO COMPO, Amstrad Action, Beauford Court, 30 Monmouth Street, Bath BA1 2AP.**

MEANWHILE, talking of compose, we have a few winners to announce, ahem, ahem...

● The Marvellous Micronet compo

Philip Griffiths of Shewsbury. Expect your prize soon, Philip.

● The Sensational Cynotel compo

Ah yes. Well, none of the entries were particually good, so we had to pick the least bad of the lot...

"I think comms is interesting because you could never be commpletly baud." Yes, quite. That poetic prose was penned by **A.C. Middleton of Warwickshire. Well done A.C.**

The not-as-lucky-but-still-quite-lucky runners up are **Colin Baker, Southampton. Mike Wong, Sale, Cheshire. Lee Dunleavy, Harrogate. Michael Burrows, Darlinton. Martin Callaghan, Bothwell, Glasgow. John Knight, Thetford, Norfolk. Glenroy Brown, London. Ian Killingsworth, Billingham. P Poulson, Christchurch, Dorset.**



● The heat has been affecting the *AA* staff oddly.

● The Brilliant Bilingual Smartalec Competition

(This is the last time we let Adam write the crossheads, by the way.)

The fabby *AA* T-shirt goes to **Simon Sheldon, Bridgetown, Devon.**

Simon also points out that 'escroc' is spelt without the 'i'. All right, clever clogs. We knew that. Anyway, for all those dimwits out there who didn't know, the translation is:

"Here you are at Korando. Here there is an inn and a shopkeeper who has the reputation of being a swindler." Yes, we know that feeling.

● If it's free I want one...

The five freeloading fanatics who each get an ultra-cool Siren Software T-Shirt are:

Sean McManus, Stevenage, Herts. Mike Worsley, Fareham, Hants. John Jones, Scunthorpe. Elinor Puzey, Swansea. Gilbert Wilson, Stow-on-the-Wold, Gloustershire.

Well done y'all. You'll be seen in style this summer.

(OK, that's enough prizes – ed.)

To the newsagent: **Amstrad Action** *is distributed by* **COMAG**

Dear newsagent,
Please reserve me a copy of the July issue of *Amstrad Action*, due out on Thursday 21st June.

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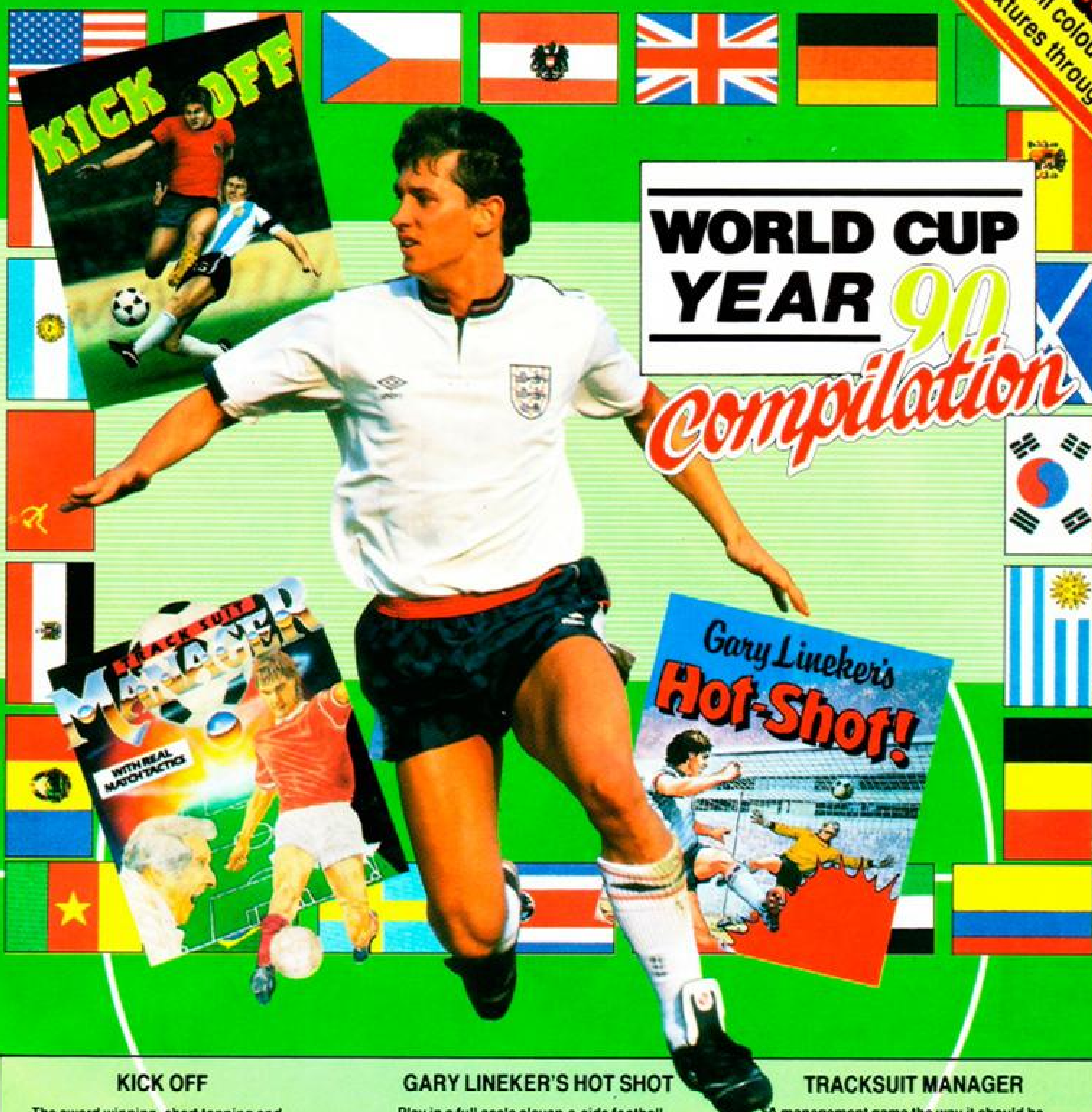
AA58 comes out on June 21st – and it'll sell like hot cakes. So what d'you do? RESERVE ONE NOW!

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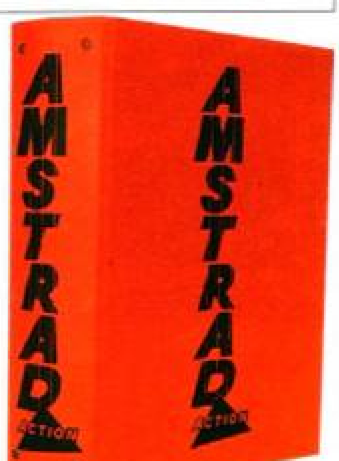


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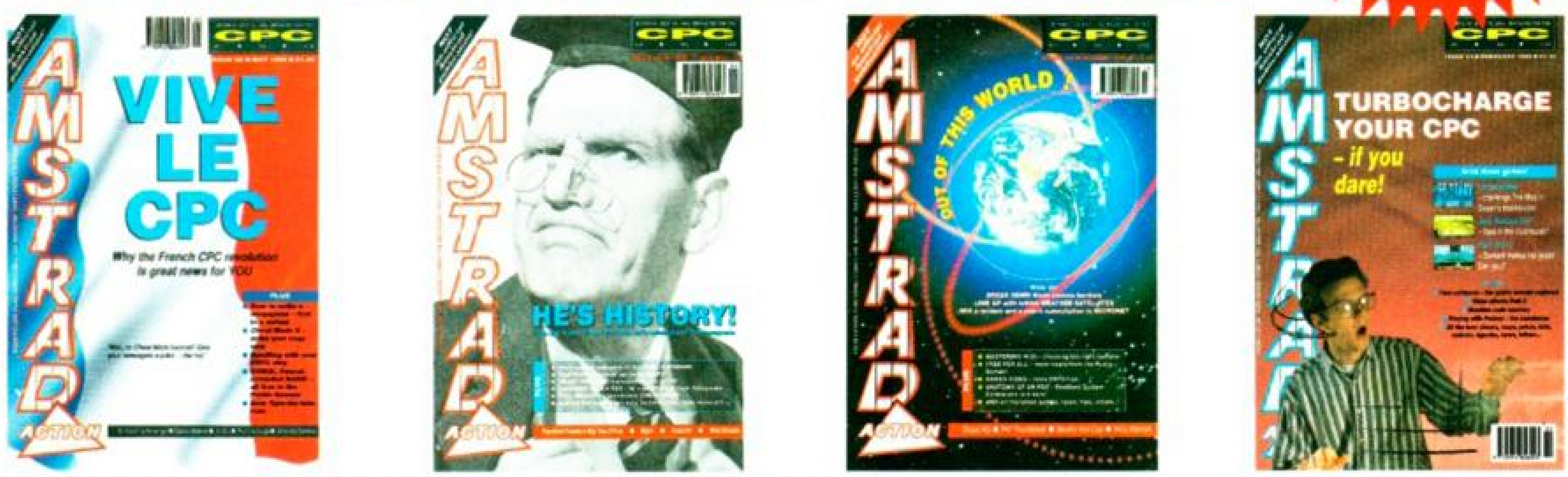
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